



Office of the  
Deputy Prime Minister  

---

Creating sustainable communities

# Evaluation of the Arson Control Forum's New Projects Initiative

## Final Report: January 2005: Technical Annex

January 2005

Rick Brown, Evidence Led Solutions  
Matt Hopkins, Morgan Harris Burrows  
Amanda Cannings, Evidence Led Solutions  
Stephen Raybould, CRG Research



Office of the Deputy Prime Minister: London

Office of the Deputy Prime Minister  
Eland House  
Bressenden Place  
London SW1E 5DU  
Tel: 020 7944 4400  
Website: [www.odpm.gov.uk](http://www.odpm.gov.uk)

© *The Queen's Printer and Controller of Her Majesty's Stationery Office 2005.*

*Copyright in the typographical arrangement and design rests with the Crown.*

*This publication (excluding the Royal Arms and logos) may be reproduced free of charge in any format or medium provided that it is reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright with the title and source of the publication specified.*

*For any other use of this material, please write to HMSO Licensing, St Clements House, 2-16 Colegate, Norwich NR3 1BQ Fax: 01603 723000 or e-mail: [licensing@hmsso.gov.uk](mailto:licensing@hmsso.gov.uk).*

Further copies of this publication are available from:

ODPM Publications  
PO Box 236  
Wetherby  
West Yorkshire  
LS23 7NB  
Tel: 0870 1226 236  
Fax: 0870 1226 237  
Textphone: 0870 1207 405  
E-mail: [odpm@twoten.press.net](mailto:odpm@twoten.press.net)  
or online via [www.odpm.gov.uk](http://www.odpm.gov.uk)

January 2005

Product code: 04 LRGG 02798

# Executive Summary

## INTRODUCTION

This study reports on the findings from an evaluation of the Arson Control Forum's New Projects Initiative (NPI). This programme was launched in England and Wales in April 2001. Funded by the Office of the Deputy Prime Minister, the NPI set up projects designed to tackle arson using a variety of interventions. Between 2001 and 2003, the NPI funded 45 projects over two rounds of bidding, with an additional round of projects commencing in 2004. Of these, 31 projects were subsequently evaluated.

## METHODOLOGY

The research consisted of three main components:

- A **process evaluation**, to gain an understanding of what was implemented and how it was undertaken.
- An **impact evaluation**, to gain an understanding of the extent to which the projects were associated with a reduction in arson.
- A **cost effectiveness** analysis to assess the costs associated with achieving the observed impact.

Ten of the 31 evaluated projects were chosen as case studies and these were subjected to more detailed fieldwork and formed the basis for the process evaluation and cost-effectiveness analysis.

## DESCRIPTION OF THE PROJECTS

The 31 projects were located in 23 separate brigade areas, which covered every government region in England and Wales. In general projects set out to address three distinct problem categories:

- Fires where the targets were specific combustible materials – such as vehicles, refuse, bonfires and grassland.
- Fires where the targets were specific vulnerable locations – such as schools, businesses, insecure and derelict buildings.
- Fires where the targets were vulnerable populations- such as ethnic minority groups.

These problems were addressed through a variety of interventions. Overall, 280 interventions were identified, averaging eight per project. These consisted of 35 distinct *types* of intervention. The most common form of intervention were 'capacity building' approaches, that were designed to strengthen the project team and its partner's ability

to deliver arson reduction activities. Forty three percent of interventions undertaken by projects were of the capacity building variety.

Awareness raising interventions accounted for 29% of interventions. These involved a range of approaches, including the printing of leaflets, booklets etc and provision of advice to a range of organisations. The remaining interventions included those associated with the removal of fuel, diversion, reducing offending, detection and situational prevention.

Implementation was generally well executed by projects. By the end of the evaluation fieldwork, few interventions had failed to get off the drawing board, or had stalled mid way through implementation.

## **EXPERIENCES OF IMPLEMENTATION**

Strong implementation resulted from a number of factors. Firstly, many projects devoted considerable effort to scanning and analysis of local arson problems and one of the by-products of this has been improved data systems and improved data sharing between agencies.

In setting up projects, implementation was facilitated by strong partnership working and by strong steering groups in some areas. However, the initial project set-up phase was hampered in some areas by the time it took to notify projects that funding was available and by problems associated with the recruitment of suitable staff.

Once implementation commenced, projects were facilitated by a clear focus on specific arson problems and many avoided the 'scatter-gun' approach in which limited resources were spread too thinly. Furthermore, the fact that many projects used funding to employ or second dedicated staff was probably a key factor in implementation success as this allowed the team to focus on the project without the distraction of other areas of work. However, there appeared to be a need for a balance between funding staff and making sufficient funds available for the day-to-day running of projects. In some cases, a lack of funds meant that additional fund-raising was necessary.

## **IMPACT OF THE PROGRAMME**

The New Projects Initiative was associated with a high degree of impact. Projects were evaluated on a case-by-case basis, with different types of analysis being undertaken dependent on the types of fire tackled and on the method of implementation. A summation of the individual project impacts indicated that 22 (out of the 24 examined) were associated with a positive impact.

Analysis of total deliberate primary fires revealed that there were between 1,046 and 4,251 fewer fires as a result of the 14 projects that had an impact on this type of problem.

Where deliberate primary vehicle fires were concerned, the impact analysis suggested that there were between 672 and 2,690 fewer incidents following intervention among the 15 projects that showed an impact.

## **COST EFFECTIVENESS**

Analysis of the costs associated with the ten case studies revealed that the funding provided by the NPI was a relatively small proportion of the total cost of projects, accounting for approximately one third of all costs.

A breakdown of how costs were distributed showed that start-up costs were very low. On average, only 5% of the costs were associated with the start-up phase. This suggests that most of the costs are on-going and means that continued implementation of projects will require on-going funding. Over half of the costs were associated with staff salary costs, which underlines the focus of expenditure on employing staff, rather than on 'working-capital' associated with the day-to-day running of projects.

Where cost-savings were concerned, analysis of four case studies found to reduce deliberate fires were estimated to have saved between £2.40 and £33.20 for every £1 invested. Extrapolating the results to the 14 projects (including non-case study projects) that showed a reduction in total deliberate primary fires resulted in a net saving of between £19.6 million and £94.4 million for the projects concerned.

## **CONCLUSIONS**

The Arson Control Forum's New Projects Initiative would appear to have been well implemented and associated with significant reductions in the level of arson across a wide range of projects. As such, there is merit in continuing to fund projects in this way.



# Contents

<b>SECTION 1</b>	
Introduction	9
<b>SECTION 2</b>	
Description of the projects	16
<b>SECTION 3</b>	
Experiences of implementing projects	26
<b>SECTION 4</b>	
Impact of projects	32
<b>SECTION 5</b>	
Cost effectiveness	38
<b>SECTION 6</b>	
Conclusions and recommendations	46
<b>REFERENCES</b>	49
<b>ANNEX A</b>	
Project Summaries (Non-Case Study Sites)	50
<b>ANNEX B</b>	
Case study descriptions	74
<b>ANNEX C</b>	
Impact Analysis of individual Projects	145
<b>ANNEX D</b>	
Cost Analysis for Case Study Sites	256





# SECTION 1

## Introduction

### INTRODUCTION

In recent years, there has been a sharp increase in the number of arson incidents recorded by the Fire Service in the UK. Between 1991 and 2001 (the latest figures available) the number of malicious<sup>1</sup> incidents increased by 78%, from 69,300 to 123,200.

In response to the growing problem, the Home Office<sup>2</sup> commissioned the Arson Scoping Study (1999)<sup>3</sup>. The key result of the scoping study was the establishment of the Arson Control Forum (ACF) in October 2000. This was established upon the recommendation that a central strategic agency should be formed to direct efforts to combat arson.

In April 2001, the Arson Control Forum's New Projects Initiative (NPI) was launched in England and Wales. Funded by the Office of the Deputy Prime Minister, the NPI set up projects designed to tackle arson using a variety of interventions. Between 2001 and 2003, the NPI funded 45 projects over two rounds of bidding, with an additional round of projects commencing in 2004.

This report provides an evaluation of the 45 projects funded under the first two rounds of the New Projects Initiative (April 2001 and 2002). It provides a description of the projects undertaken, comments on the process of implementing projects, examines the impact and assesses the cost effectiveness of the projects.

### PREVIOUS RESEARCH ON ARSON

While there has been a great deal of literature produced on arson (see, for example, Edmunds, (1978), Prins *et al* (1985) and Barker, (1994)) most of this has concentrated on the characteristics and motivations of the perpetrator, rather than on examining methods of tackling the problem. Among those that have dealt with arson reduction initiatives are Burrows *et al* (1992) study of arson in schools, a study of Newcastle Arson Task Force by Marsh (2000), and Canter and Almonds' (2002) review of arson reduction interventions.

Burrows *et al's* (1992) study was initiated to gauge the prevalence of arson in schools, to document what schools and Education Authorities were doing to prevent such fires and provide guidance on the direction and shape of future preventive strategies. The results of the study were based upon the findings of interviews with 450 schools. The study found that 17% of schools experienced at least one incident of fire per year,

<sup>1</sup> The term 'malicious' in the Office of the Deputy Prime Minister's Fire Statistics report includes malicious and deliberate fires. Through out this report, the term deliberate will be used as a preference to 'malicious'.

<sup>2</sup> Responsibility for the Fire Service now sits with the Office of the Deputy Prime Minister (ODPM).

<sup>3</sup> Home Office (1999)

around four in ten incidents were not reported to the fire brigade and it was suspected that around 71% of incidents were started deliberately. The report also examined the precautions taken by schools to prevent arson and made recommendations for the prevention of arson. The survey suggested that schools tended to underestimate the risk of arson, the provision of prevention measures was 'patchy overall' and that little advice about prevention was given by the fire brigade or police.

Marsh (2000) evaluated the effectiveness of the Newcastle Arson Task Force – a multi-agency partnership approach dedicated to reducing the incidence of arson. This showed that in the task force area there was a significant reduction in deliberate fires in property and those involving litter, refuse and derelict furniture compared with an increase in the whole Tyne and Wear area. The Newcastle task force subsequently became a model for a number of similar task forces developed through the New Projects Initiative.

The publications by Burrows *et al* (1992) and Marsh (2000) reported on projects that had been implemented to reduce arson. A more recent report by Canter and Almond (2002) highlighted the need to further understand offender motivation and the types of property likely to be targeted by offenders if effective strategies for the reduction of arson are to be established. Drawing on existing research they suggested four types of motivation:

- Youth Disorder (curiosity and vandalism)
- Malicious Intent (fire as a weapon and revenge)
- Emotional Expression (means of communication)
- Criminal Action (to cover another crime or fraud).

Canter and Almond suggested a number of potential interventions to prevent / reduce arson. These included:

- 1) **Interventions concerning arsonist / potential arsonist.** These included education, counselling, treatment and increasing detection and conviction (these were broken down and discussed with reference to types of motivation).
- 2) **Target hardening.** These included the removal of fuel (i.e. cars, litter), a focus towards discouraging minor disorder (i.e. to halt the decay cycle<sup>4</sup> and prevent escalation to arson attacks), a concentration on 'secured by design' and an increase in guidance available for individuals.

The authors also commented on the lack of research regarding existing intervention schemes, stating it is "*noticeable that very few approaches are systematically monitored or evaluated*" (p.19). They called for further research specifically focusing on determining the nature and extent of fire-setting and its associated criminal activity, the motivation of the young to start fires (including their 'natural' fascination), fraudulent arson, prediction / risk factors (with reference to offenders) and evaluation of initiatives aimed at tackling arson.

The introduction of the Arson Control Forum's New Projects Initiative addresses these issues by funding projects that tackle the problem through situational prevention methods as well as projects that address the behaviour of those involved in committing arson. The following pages examine the findings from the evaluation of these projects.

<sup>4</sup> Wilson & Kelling (1982)

## METHODOLOGY

This study involved three components:

- A **process evaluation**, to gain an understanding of what was implemented and how it was undertaken.
- An **impact evaluation**, to gain an understanding of the extent to which the projects were associated with a reduction in arson.
- A **cost effectiveness** analysis to assess the costs associated with achieving the observed impact.

### *Sampling process*

Of the original 45 projects included in the first two rounds of the NPI, 30 projects were selected for evaluation, in partnership with ODPM. These were selected to provide a mix of different interventions covering different types of area. Initial fieldwork with these 30 projects revealed one whose interventions (working with young people) were not expected to show an impact for a number of years. As this fell outside of the life of the evaluation, it was excluded from the analysis. A second project was found to consist of a consortium of three fire brigades. As such, it was felt sensible to treat this as three separate projects. As a result of these adjustments, the final evaluation consisted of 31 projects.

From the sample of 31 projects included in the evaluation, ten were selected as case study sites. These case studies were used to explore in more detail the process of implementation, as well as to collect full cost information associated with their implementation.

### *Data collection*

Between November 2002 and April 2004, there were a number of phases of data collection, including:

- An initial telephone survey to gain an understanding of all projects.
- Fieldwork visits to each of the 31 projects on two occasions.
- On-going data collection for inputs, outputs and outcomes.

The data collected from projects is summarised in Table 1 and shows that most projects received the same level of evaluation, although the intensity of data collection in the ten case study sites was greater than in the non-case study sites, with additional information collected on process and costs.

<i>Types of data collection</i>	<i>Case study site</i>	<i>Non case study site</i>
Telephone survey	Yes	Yes
Fieldwork visits	Yes	Yes
Cost data	Yes	No
Output data	Yes	Yes
Outcome data	Yes	Yes

## IMPACT EVALUATION

The impact evaluation raised a number of methodological issues that need to be taken into account when considering the findings presented later in this report.

### *Type of fire data used*

There are four main categories of fire data available:

- a. Primary fires (FDR1 fires):** These are reportable fires that result in the loss of property or any fires involving casualties, rescues or fires attended by five or more appliances. An appliance is counted if either the appliance, equipment from it or personnel riding on it were used to fight the fire. These include fires in:

Buildings

Caravans/ trailers etc

Vehicles and other methods of transport (not derelict)

Outdoor storage/ plant and machinery

Agricultural and forestry premises and property

Other outdoor structures including post boxes, tunnels and bridges.

- b. Secondary fires (FDR3 fires):** These are reportable fires that;

were not in primary fire locations

were not chimney fires in buildings

did not involve casualties or rescues

were attended by four or fewer appliances.

- c. Chimney fires (FDR3 fires):** These are reportable fires in occupied buildings;

where the fire was contained in the chimney structure

did not involve casualties or rescues

was attended by four or fewer appliances

- d. False alarms (FDR3 fires):** Calls to the fire service where on arrival it was apparent that there was not a fire at the location.

For the purposes of this evaluation, a mix of primary and secondary fire data were used. Most of the analysis concentrated on primary fires because these are considered more robust and because nationally available data used for comparisons (see later) concentrates on primary fires. When examining the overall impact, the analysis tends to focus on primary fires. Secondary fires are used where the focus of interventions were on tackling such fires, such as refuse fires, or grassland fires.

### *Cause of fire*

For the purposes of this evaluation, it was important to examine the cause of the fire. The FDR1 fire report form, used to collate information on primary fires previously distinguished between 'accidental', 'malicious', 'deliberate', 'doubtful' or 'not known', though as a consequence of problems regarding the definitions of 'malicious' and 'doubtful' and in response to the Arson Scoping Study, Home Office circular 21/2000

discouraged fire brigades from using these classifications (though they still remain on the FDR1 form). Therefore the causes of fires recorded on the FDR1 are either:

1. Accidental (where the fire is an accident)
2. Deliberate (including malicious and doubtful)
3. Not known (where cause cannot be established)

In addition to the data recorded on the FDR1 form, the FDR3 forms record false alarms, chimney fires, secondary fires and the main causes of secondary fires. The cause of false alarms (i.e. malicious, good intent, due to apparatus) is noted, as is the location of secondary fires (derelict buildings, grassland, outdoor structure, refuse, derelict vehicle) and the method of extinguishing the fire. In addition to this, the main cause of the fire is also noted. However, unlike the FDR1 form only two potential causes are noted. These are deliberate and accidental.

For the purposes of this analysis, 'deliberate' FDR1 and FDR3 fires were taken as the measure of arson. Most of the analysis presented here therefore involves the following categories of fire:

- Total fires (both FDR1 and FDR3)
- Total deliberate primary (FDR1) fires
- Deliberate primary (FDR1) vehicle fires
- Deliberate primary (FDR1) fires in schools
- Deliberate secondary (FDR3) fires involving refuse
- Deliberate secondary (FDR3) fires involving grassland
- Deliberate fires in dwellings (both FDR1 and FDR3)

### ***Use of comparison areas***

The impact analysis presented here used a standard quasi-experimental design, which involved examining the change in deliberate fires in the target area in comparison to changes in deliberate fires in a comparison area. The comparison area was used to assess what might have happened in the target area had there been no intervention. Any difference between the target area fire levels and the comparison area fire levels is deemed to be due to the impact of the intervention, rather than due to some other spurious factor. This is by no means a precise science and the results can be largely influenced by the selection of comparison areas. For this reason, a decision was made to use multiple comparison areas and present the impact of the project as a range between the lowest and highest levels of impact. Up to four comparison areas were available (although most projects had fewer than this):

- A comparison site in another brigade not implementing an NPI project. These were purposively (non-randomly) selected on the basis that they appeared to share similar attributes in terms of size of area, population, urban / rural split etc.
- For projects operating at the sub-brigade level (i.e. particular station areas) comparisons were made to the rest of the brigade.
- Comparisons were made to the Brigade Family Group in which the target brigade was located.

- Comparisons were made to the total for England and Wales.

### ***Non-audited data***

The evaluation used a mix of audited and unaudited data. Information on the project areas and on the matched comparison site were mostly obtained from the brigades themselves up to December 2003. However, the period from April to December 2003 had not been audited by ODPM, so may be subject to variation. This was included in the analysis because it provided additional data on which to assess project trends.

Data for the Brigade Families and for England and Wales were obtained from ODPM and consisted of audited information. The disadvantage of this, however, was that it was only available up to March 2003. This meant that many of the comparisons could only be made up to this point and little assessment could be made of the impact after that date.

### ***The effect of the Fire Strike***

During the course of the evaluation, there was a national strike by fire-fighters. During this period, emergency calls were taken by the armed forces and this means that there are no statistics on the number of deliberate fires occurring during strike days. It was not possible to estimate how much impact this had on levels of deliberate fires in the areas concerned.

### ***Timescale for analysis pre / post intervention***

The analysis of impact used equal time periods before and after intervention. The standard approach was to use one year before intervention and one year after intervention. The start point was taken to be when implementation was regarded as starting, rather than the point at which projects received funding. In some cases, less than one year had to be used – either because there was insufficient pre data, or insufficient post data. In these cases, similar months would be selected for both periods, in order to control for seasonality.

## **COST-EFFECTIVENESS**

Evaluators were asked to consider the value-for-money offered by the various case study interventions. At the project inception stage evaluators defined the scope of the research, identified the data required and obtained budgetary information relating to the case study interventions.

Comprehensive data on the resources used by the schemes was then collected from the projects. For consistency, the data were categorised under standardised headings including the cost of time spent on the project by designated staff, training fees, premises and equipment costs, travel, project promotion and other project-related costs. In each case a distinction was made between those resources consumed in setting up the intervention and those consumed in the ongoing delivery. Ongoing costs were also calculated on a monthly basis. This provided a basis from which long-run costs could be estimated and allowed appropriate comparisons to be drawn with the periods chosen for the outcomes evaluation.

Information was sought on both the quantity and cost each resource consumed. In the case of staff input, hourly costs were derived from budgetary information, Home

Office<sup>5</sup> standard costs and the Fire Service terms and conditions<sup>6</sup>. Where costing information was not available, standard (shadow) costs were estimated.<sup>7</sup> The values chosen were based upon similar costs incurred in other case study schemes

Comprehensive costing also required evaluators to cost those inputs not funded by the ACF but utilised in the delivery of the schemes. This required estimates to be made by key project personnel on the input of partner agency staff and other resources.

Information was also collected on project outputs and outcomes. Outputs relate to the product of project input. For example, the number of vehicles removed or the number of arson audits completed. They are useful in placing the input costs in context. In most cases, the schemes included more than one output measure, reflecting the various interventions implemented within those schemes.

Finally, monetary valuations for the derived project outcome were compared with project costs. To do this information was first needed on the costs to society of various forms of deliberate fires. The valuations used in this research are from Dennison (2003) who, building upon earlier work by Weiner (2001) and Roy (1997), provides standardised costs incurred in anticipation of, in response to, and as a consequence of various forms of fire. It should be noted that not all impacts are valued. For example, there is no inclusion for environmental costs or intangible losses for personal items.<sup>8</sup> As such, the economic evaluation was more formally defined as a cost-saving analysis rather than cost-benefit analysis since not all changes in all societal welfare are valued.

The end result was a data set linking costs to outcomes (via outputs) from which evaluators could derive a series of cost-saving ratios. From these data the case study projects were compared in terms of the value for money they offered and the key assumptions upon which the conclusions drawn were noted.

<sup>5</sup> Home Office 'Ready Reckoners' produced for the Crime Reduction Programme, 2001

<sup>6</sup> Fire Brigades Service Union

<sup>7</sup> Shadow costs were often needed for use of existing premises and equipment,

<sup>8</sup> A point made by Weiner (2001). As such, the economic evaluation was more formally defined as a cost-saving analysis rather than cost-benefit analysis since not all changes in all societal welfare are valued.

## SECTION 2

# Description of the projects

### INTRODUCTION

This section examines the types of projects that were funded by the New Projects Initiative, including the type of problem addressed and the interventions that were undertaken.

### BRIGADES IN WHICH PROJECTS WERE LOCATED

Table 2 shows that the 31 evaluated projects were located in 23 separate brigade areas. In two cases, projects were operated in a consortium of brigades. For example one project operated across Cornwall and Devon and was staffed by the same personnel (this was treated as one project). Another project operated across three Welsh brigades – South Wales, Mid and West Wales and North Wales, with Mid and West Wales receiving funding and distributing it to the other areas. This was treated as three separate projects as it involved implementation by three separate teams.

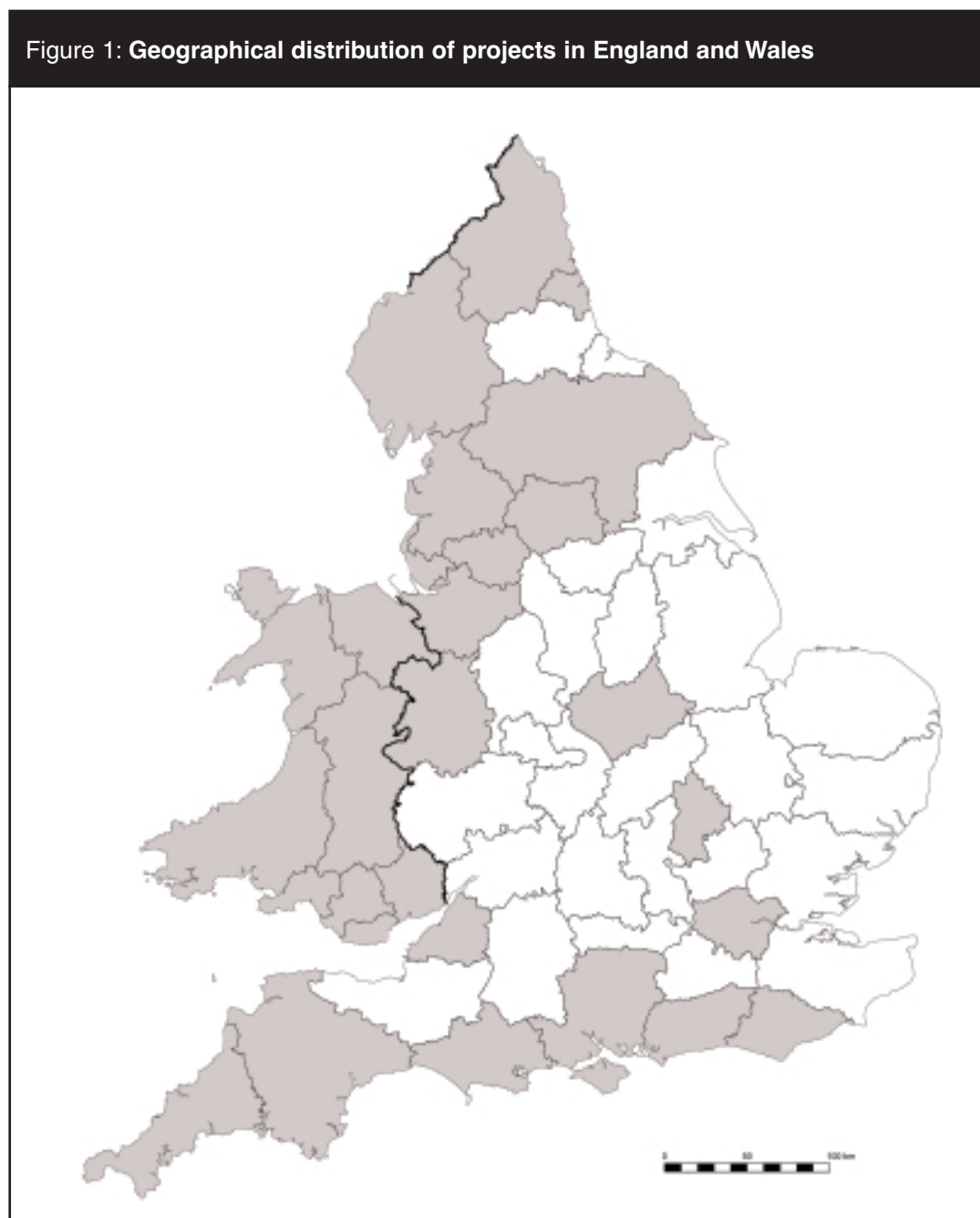
<b>Table 2: Fire brigades in which project were implemented</b>	
<i>Brigade</i>	<i>Number of projects evaluated</i>
Avon	2
Bedfordshire	1
Cheshire	2
Cornwall and Devon	1
Cumbria	1
Dorset	2
East Sussex	1
Greater Manchester	1
Hampshire	2
Lancashire	1
Leicestershire	1
London	3
Merseyside	2
South Wales	1
North Yorkshire	1
Northumberland	1
Shropshire	2
Mid and West Wales	1
Tyne and Wear	1
West Sussex	1
West Yorkshire	2
North Wales	1
<b>Total</b>	<b>31</b>



In the following analysis, some areas with multiple projects are treated as one project when the geographical area covered or the problem addressed is the same.<sup>9</sup>

In other cases, it was possible to analyse projects separately because they were different in kind. The decision on how to analyse projects was made pragmatically, on the basis of whether it was possible to draw distinctions between them.

Evaluated projects funded under the NPI were distributed across England and Wales as shown by Figure 1. All ten government regions were covered by the evaluation, although there was more of a focus on the northern most and southern most areas.

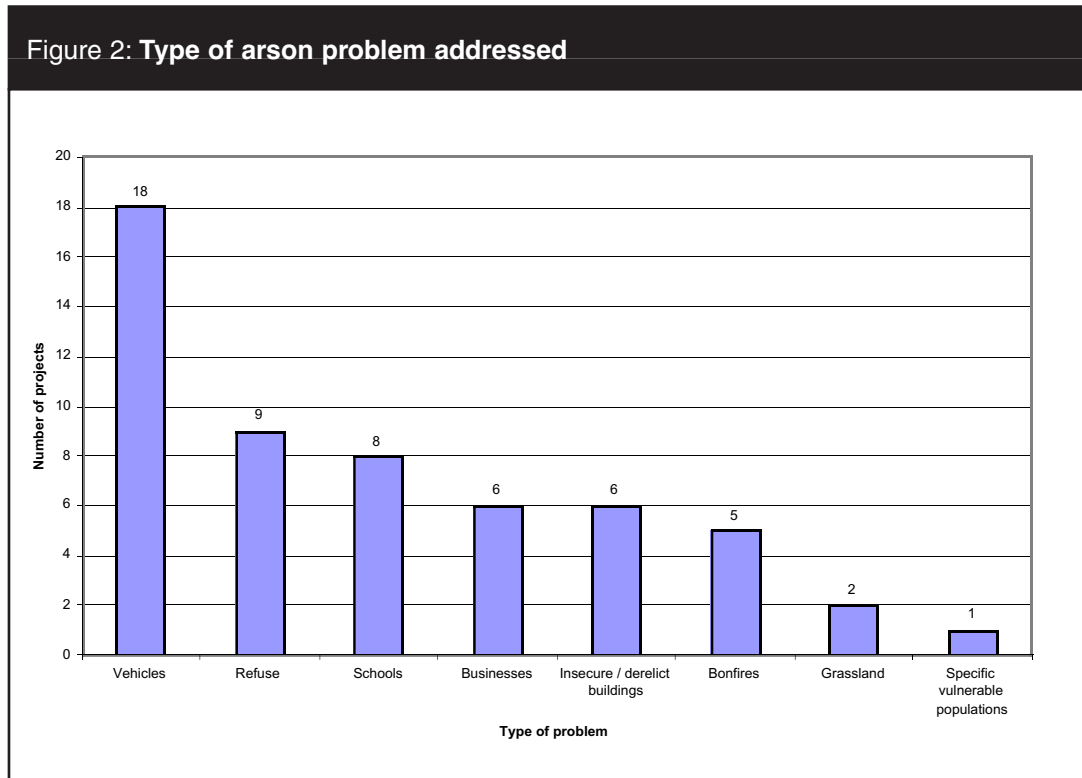


<sup>9</sup> For example, in West Yorkshire there were two projects one based on conducting schools arson audits, the other a joint police and fires school arson reduction programme. It was apparent that these two projects were actually part of the same overall programme and were thus treated as one project.

## TYPE OF ARSON PROBLEM ADDRESSED BY PROJECT

All of the projects funded under the NPI tackled arson problems in some form. Some projects tackled the generic problem of 'arson' by focusing on particular activities, such as awareness raising and working with offenders. Other projects focused on specific categories of arson problem.

Figure 2 shows that 18 (58%)<sup>10</sup> projects recognised a need to tackle a problem with vehicle arson. This was by far the most common problem addressed by the NPI projects, with twice the number of projects tackling this as the next most frequent problem. Refuse fires were also a common problem addressed, with nine (29%) projects tackling this issue, while eight (26%) addressed arson risks associated with schools.



In general, there would appear to be three distinct categories of problem addressed by projects. These include:

- Fires where the targets are specific combustible materials – such as vehicles, refuse, bonfires and grassland.
- Fires where the targets are specific vulnerable locations – such as schools, businesses, insecure and derelict buildings.
- Fires where the targets are vulnerable populations- such as ethnic minority groups.

<sup>10</sup> The number of projects totals more than 31 in this chart because some projects addressed more than one specific type of arson problem.

## TYPES OF INTERVENTION

The projects employed a wide range of interventions to tackle the arson problems in their areas.<sup>11</sup> In total, the 31 projects incorporated 280 interventions, averaging nine interventions per project. This underlines the complex, multi-faceted nature of many of the projects examined. The 280 interventions were categorised into 35 separate interventions, which were then grouped into seven intervention themes, as shown in Table 3.

<b>Table 3: Types of interventions undertaken by projects</b>		
<i>Intervention Theme</i>	<i>Intervention</i>	<i>Number of projects employing intervention</i>
<b>Capacity Building</b>	Closer working with police / other orgs	31
	Co-ordination of existing interventions	10
	Implementation of POP	2
	Development of arson strategy	10
	Research	10
	Mapping and data analysis	18
	Arson data exchange	11
	New data collection system	6
	Improved investigation	10
	Raising Awareness of existing interventions	13
	<b>Removal of Fuel</b>	Removal of rubbish used for fires
Removal of abandoned / untaxed / burnt out vehicles		15
Vehicle amnesty scheme		9
Securing derelict buildings		3
<b>Awareness</b>	Raising Arson audits	6
	Advice to schools	12
	Advice to businesses	6
	Advice to councils	6
	Advice to community groups	8
	Erection of warning signs	3
	Aide Memoire cards to Fire/Police	3
	Newsletter	4
	Booklet / leaflet campaign	16
	Advice to owners of vulnerable vehicles	3
<b>Diversion</b>	Poster campaign	9
	Radio campaign	6
	Short term activity programme	2
<b>Reducing Offending</b>	Cadets	1
	Working with young people at risk of committing arson	7
<b>Detection</b>	Counselling programmes	2
	Working with those convicted of arson	1
	Information to children in schools about arson	7
<b>Situational Prevention</b>	Co-ordination of fire investigation with police	8
	Increased police patrolling	1
<b>Situational Prevention</b>	Advice to designers.	4
	Improving security of locations	8

### *Capacity building*

Capacity building interventions were those that strengthened the project team and its partner's ability to deliver arson reduction activities. These interventions had an indirect impact on arson in the sense that they improved the capacity of the team to tackle arson, which in turn would assist with other interventions. As such, these

<sup>11</sup> It should also be noted that a number of projects may have indirectly helped to facilitate reduction activity through giving advice to groups such as businesses and schools. In many circumstances the recipients of such advice may have installed mechanisms or taken actions to prevent arson that the project had no knowledge of but were a result of project activity.

interventions were not directly associated with arson reduction activity, but played an important supporting role.

Capacity building interventions were by far the most common form of activity undertaken by the projects, accounting for 121 (43%) of the interventions (see table 4). This reflects the nature of how many of the projects were established. Many projects initially concentrated on establishing appropriate project structures, with bids made under the New Projects Initiative to establish Arson Task Forces or project officers. These additional resources were used to improve upon existing practice, as well as to launch new initiatives.

The most common form of capacity building involved closer partnership working, with all projects reporting this kind of activity. This most frequently involved contact with the police (for example, through the secondment of officers), although it also included closer working with other agencies, including local authorities and Youth Offending Teams.

One of the key characteristics of the projects evaluated (and probably one of the key factors in their success) was the considerable investment in additional research and analysis. For example, 18 projects undertook additional mapping / data analysis, while 11 introduced protocols for the exchange of data between agencies. This provided a sound foundation upon which many projects developed interventions.

### ***Awareness raising***

Awareness raising activities accounted for 82 (29%) of the interventions undertaken by projects. Here the main purpose was to raise awareness regarding the risks associated with arson, which in turn, was intended to increase the likelihood that those at risk would take action to address the problem. This awareness raising took many forms, including the printing of leaflets (16 projects), production of posters (nine projects) and provision of advice to a range of organisations, including schools (12 projects), community groups (eight projects) and businesses (six projects).

### ***Removal of fuel***

Removal of fuel related to interventions that aimed to reduce the risk of arson occurring by removing materials that could be set alight. This type of intervention accounted for 36 (13%) of the total number of interventions undertaken by projects. The most common form of interventions in this category involved vehicle removal schemes (15 projects), vehicle amnesty schemes (in which old vehicles could be disposed of free of charge) (nine projects) and removal of rubbish that could be set alight (nine projects).

### ***Reducing offending***

Seventeen (6%) interventions attempted to reduce or prevent individuals from committing arson. The most common of these took the form of working with those at risk of committing arson (seven projects) or presentations to young people in schools about the risks of arson (seven projects).

### ***Situational prevention***

Situational prevention measures related to improving specific locations. A total of 12 (4%) interventions involved situational prevention, with eight related to improvements in security and four related to long-term interventions associated with advice given to designers on planning out the risks of arson.

***Detection***

Detection related to approaches that increased the likelihood of identifying who perpetrated arson offences. Four of the five interventions in this category related to increased police patrolling in areas at risk of arson.

***Diversion***

There were three interventions focusing on diversion. These aimed to provide alternative, legitimate pursuits for those at risk of engaging in arson. In one case, this involved an activity programme for young people. The remaining two cases involved Fire Cadet schemes in which young people could learn more about being a fire-fighter.

**PROGRESS IN IMPLEMENTING INTERVENTIONS**

During the course of the evaluation, a classification was developed for describing the progress made with implementing each of the interventions. This was used to track overall progress in implementing the New Projects Initiative. The classification consisted of six categories:

- ‘Being considered’ meant a possible intervention had been identified, but no action had been taken to develop it further.
- ‘Aborted plan’ was an intervention that had started to be planned, but had been shelved either due to lack of funds or because it was not workable.
- ‘Planned’ related to an intervention that was planned to be implemented, but where implementation had yet to commence.
- ‘Stalled’ related to an intervention that had started, but whose implementation was stopped before it had been completed.
- ‘On-going’ related to interventions that had started and were still progressing by the end of the evaluation. These also include interventions that had been ‘mainstreamed’ with other sources of funding.
- ‘Completed’ related to interventions where the planned implementation had been completed.

Table 4 provides a summary of the progress with implementation up to the end of 2003, when fieldwork for the evaluation was completed. This shows that the majority of the interventions were still being implemented by the end of the fieldwork, with 191 (68%) described as ‘On-going’. There were also 59 (21%) interventions that had been completed.

**Table 4: Progress with interventions up to 31st December 2003**

	<i>Being considered</i>	<i>Aborted plan</i>	<i>Planned</i>	<i>Stalled</i>	<i>On-going</i>	<i>Completed</i>	<i>Total</i>
Capacity building	0	0	7	1	88	25	121
Awareness raising	0	0	8	0	49	25	82
Removal of fuel	0	0	7	0	25	4	36
Reducing offending	0	0	2	0	14	1	17
Situational prevention	0	0	3	0	6	3	12
Detection	1	0	1	0	7	0	9
Diversion	0	0	0	0	2	1	3
<b>Total</b>	<b>1</b>	<b>0</b>	<b>28</b>	<b>1</b>	<b>191</b>	<b>59</b>	<b>280</b>

The fact that so many interventions had yet to be completed raises an issue for the outcome analysis presented later. It suggests that there may continue to be an impact beyond the period examined.

Crime reduction programmes of the kind characterised by the New Projects Initiative (involving large numbers of projects run by partnerships of different agencies and implementing diffuse interventions) are often marked by a high level of implementation failure<sup>12</sup>. This would not appear to be the case with the New Projects Initiative. While there were indeed problems associated with implementing projects, as outlined in the next chapter, there were relatively few interventions that 'failed'. By the end of the evaluation there were still 28 interventions that were still at the planning stage and these may represent interventions that get no further than a plan. Only one intervention stalled, in the sense that it was started but not completed.

The low level of absolute implementation failure may partly be a result of the emphasis on capacity building activities. Project teams are likely to have more control on these interventions by their very nature, because they would usually involve altering internal working practices. However, they may also have provided a sound basis on which to undertake other interventions. For example, sound research and analysis, improved communication and closer working may all have assisted the process of implementing projects.

The nature of the interventions undertaken may also have assisted in ensuring implementation proceeded as planned. Many involved relatively simple interventions that were within the control of the project staff. For example, most awareness raising interventions were simple to design and execute. In general, it would appear that the simpler the intervention, the more likely it is to be well executed.

## **OUTPUTS PRODUCED BY PROJECTS**

Outputs were defined as the product of activity undertaken 'on the ground' to influence the scale of arson in a local area. They were effectively a measure of what was produced by project teams. For the purposes of the evaluation, outputs were directly related to the interventions undertaken by projects, with one output being defined for each intervention. Quantitative measures were produced for each of these.

<sup>12</sup> See, for example, Bullock et al (2002).

Table 5 provides a breakdown of the outputs produced by projects. It should be noted that in some cases these will be under-estimates of the total amount of outputs produced, due to the difficulty that some projects had in keeping track of outputs and that the evaluators definitions of outputs were, in some cases, not available until after much of the implementation had been completed. This meant that some projects had to estimate the scale of outputs retrospectively. The following paragraphs comment on outputs produced under each of the evaluation themes.

### ***Capacity building outputs***

No outputs were defined for capacity building on the basis that these were primarily concerned with *process*, rather than with activities that would have a direct impact on arson problems. The extent to which these interventions were undertaken was measured more qualitatively through the case studies.

### ***Removal of fuel outputs***

Given the fact that 18 projects recognised vehicle arson as a problem and that 15 projects employed interventions to remove vehicles, it was unsurprising to find that vehicle removal was a major output. In total, almost 47,000 vehicles were removed, averaging 3,111 per project adopting vehicle removal schemes. In addition, almost 10,000 vehicles were removed as part of vehicle amnesty schemes.

In addition, there were almost 8,000 locations from which rubbish, that could potentially be a fire risk, were removed.

### ***Awareness raising outputs***

As previously noted, awareness raising outputs formed a major aspect of the interventions undertaken by projects. Among the most prolific outputs in this area were the production of newsletters, booklets and leaflets, with over 400,000 distributed by projects.

Advice to different organisations also formed a major element of the work, with almost 10,000 organisations (schools, businesses, councils and community groups) receiving advice from project teams.

Table 5: Outputs produced by 31 evaluated projects by 31st December 2003

<i>Intervention Theme</i>	<i>Intervention</i>	<i>Description of output</i>	<i>Quantity of output</i>
<b>Capacity Building</b>	Closer working with police / other orgs.	Qualitative	n/a
	Co-ordination of existing interventions	Qualitative	n/a
	Implementation of POP	Qualitative	n/a
	Development of arson strategy	Qualitative	n/a
	Research	Qualitative	n/a
	Mapping and data analysis	Qualitative	n/a
	Arson data exchange	Qualitative	n/a
	New data collection system	Qualitative	n/a
	Improved investigation	Qualitative	n/a
Raising Awareness of existing interventions	Qualitative	n/a	
<b>Removal of Fuel</b>	Removal of rubbish used for fires	Number of locations where hazard removed	7,594
	Removal of abandoned / untaxed / burnt out vehicles	Number of vehicles actually removed	46,660
	Vehicle amnesty scheme	Number of vehicle actually removed	9,568
	Securing derelict buildings	Number of buildings secured	6
<b>Awareness Raising</b>	Arson audits	Number of audits completed	1,342
	Advice to schools	Number of Schools given advice	712
	Advice to businesses	Number of Businesses given advice	8,642
	Advice to councils	Number of Councils given advice	48
	Advice to community groups	Number of Community Groups given advice	370
	Erection of warning signs	Number of locations where warning signs were erected	45
	Aide Memoire cards to Fire/Police	Number of officers receiving cards	5,062
	Newsletter	Number of Newsletters distributed	23,800
	Booklet / leaflet campaign	Number of Booklets / Leaflets / Letters distributed	378,024
<b>Diversion</b>	Poster campaign	Number of Sites where posters displayed	10,274
	Radio campaign	Number of transmissions of campaign material	534
	Short term activity programme	Number of participants	143
<b>Reducing Offending</b>	Cadets	Number of participants	12
	Working with young people at risk of committing arson	Number of participants	423
	Counselling programmes	Number of participants	0
	Working with those convicted of arson	Number of participants	24
	Information to children in schools about arson	Number of children given information (maybe number of sessions x estimate of children participating)	8,655
<b>Detection</b>	Co-ordination of fire investigation with police	Number of incidents where additional co-ordination occurred	1,628
	Increased police patrolling	Number of additional hours spent on patrol	810
<b>Situational Prevention</b>	Advice to designers.	Number of Plans on which advice given	0
	Improving security of locations	Number of location where security improved	37

### ***Diversion***

Where diversion activities were concerned, the dosage of intervention was relatively light. More than 140 young people participated in short term activity programmes, while 12 participated in Cadet schemes.

### ***Reducing offending***

The main output associated with reducing offending involved giving presentations to children in schools regarding the risks of arson. In total, almost 9,000 young people received such information.



In addition, there was a considerable amount of work involving working directly with young people at risk of committing arson, with over 400 participants.

### ***Detection***

Improved co-ordination between the fire service and the police occurred in respect to over 1,600 cases. This averaged over 200 incidents per project. There was also an additional 800 hours of police patrolling.

### ***Situational prevention***

There was relatively little situation prevention activity during the life of the projects. Although four projects planned to give advice to designers, there were no records of this having occurred. However, there were almost 40 locations where the physical security was improved.

### ***Summing up the outputs***

During the course of the projects, the interventions would appear to have been associated with a great deal of activity designed to tackle arson 'on the ground'. The most significant outputs would appear to have been associated with interventions that were designed to remove potential sources of fuel and with those that aimed to increase awareness.

# SECTION 3

## Experiences of implementing projects

### INTRODUCTION

This section explores the issues that emerged from the process of actually implementing projects funded under the New Projects Initiative. It draws, in particular on the ten case study sites and focuses on the initial analysis of the problem, the process of setting up projects, delivering interventions and exit strategies associated with projects.

It is important to note from the outset of this section that the experiences of implementing projects were, on the whole, positive, with a high degree of implementation. This section will attempt to identify some of the factors that contributed to that success.

### PROBLEM ANALYSIS

One of the key strengths of the projects established under the NPI was the careful attention paid to research and analysis of the local arson problem. Many projects undertook detailed analysis of the problem before developing appropriate interventions and this meant that resources could be targeted more directly towards the problem. Box 1 gives an example of one project that undertook a detailed analysis of its arson problems. This was by no means an isolated example. In West Yorkshire, analysis of arson in schools helped to priorities attention initially on 50 establishments with the highest crime, disorder and arson records. In South Tyneside, on-going data analysis during the life of the project was supplemented by regular site visits on a day to day basis to identify problem locations.

However, it is important to note that at the outset of some projects, the data analysis capabilities were not as robust as they might have been. For example, a project in Cumbria, which focused on fires on rural farms initially found it difficult to identify these locations from the available analysis. The system was later improved to assist the identification of such locations. While rigorous data analysis was available in some areas from the outset, one of the capacity building elements of many projects was the introduction of improved data analysis and, in particular, mapping capabilities. For example, Leicestershire, Greater Manchester and London all introduced systems for improved dissemination of data analysis and maps of incident hot spots.

#### ***Data exchange protocols***

Recognising the gap between police and fire recording of arson, a number of projects introduced protocols to share data between organisations. For example, in Luton, the Arson Task Force developed links with the local Scenes of Crimes Officers, Vehicle

Examiners, CID and Force Intelligence Bureau in the local police. A memorandum of understanding was also drawn up between the police and fire service, which set out areas of joint interest, working practices and recording procedures.

These data exchange protocols should improve the flow of information between the police and fire service and, in time, should reduce the extent of the gap in recording of arson between the two organisations.

#### **Box 1: Northumberland Arson Initiative Scoping Study**

The Northumberland Arson Initiative Scoping Study is an example of thorough scanning and analysis of arson problems. This was a multi-agency exercise involving representatives from the Fire and Rescue Service, Police, District Councils and the Youth Offending Team. The resulting report, which was based largely on analysis of fire data, produced a number of important findings, including those indicating that:

- Northumberland had a higher rate of arson than the national average.
- The south-east corner of the county was experiencing the highest increases in malicious fires
- Motor vehicles were most likely to be the target of deliberate primary fires.
- The peak times for deliberate vehicle fires were between 23.00 and midnight.
- The highest proportion of deliberate secondary fires were for undergrowth fires. There were also a high number of rubbish fires, bonfires, bin and skip fires. These increased at school holiday times and in the run up to bonfire night.

The report resulted in a number of recommendations for ways to address the problem and these were used to develop a strategy for reducing arson. Funding was subsequently obtained from the Office of the Deputy Prime Minister under the Arson Control Forum's New Projects Initiative.

## **JOINT DATABASES**

As a further step in data-sharing between organisations, South Tyneside introduced a database to hold information on incidents of data recorded by the two organisations. Although this involves re-keying data recorded by the police on to the database, this should provide a more complete picture of the local arson problem.

## **SETTING UP PROJECTS**

Once a decision had been made to establish a project, the process of establishing it was often problematic. There were a number of issues that impeded the process of setting up a project.

### ***Bidding for funds***

By the very nature of the NPI, projects had to submit bids to ODPM for funding. These bids were then subject to a review process before successful projects were notified. This was felt by some project staff to have taken longer than necessary and increased the time between the initial identification of the problem and the implementation of interventions designed to tackle the problem.

One of the strengths of the funding was that it allowed project to fund posts. Indeed, much of the funding would appear to have been spent in this way. The benefit of this approach was that it secured staff dedicated to the projects, rather than relying on existing staff running the project in addition to their 'day-job'. This additional resource was likely to have been one of the factors that assisted in the delivery of the projects.

With some projects, the focus on employing staff with the available budget meant that there was insufficient 'working capital' to spend on the day to day running of interventions. This meant that time had to be spent by project staff to raise sufficient funds to operate the projects they had been employed to implement. This suggests a need for a balance in funding applications, with a need for both posts and working capital to be funded.

### ***Recruiting Staff***

One of the key issues that faced many projects was the need to recruit staff. On a time limited project, in which funds were provided for a specific financial year, this was often problematic. It was not unusual for a project to take four to six months to recruit key members of the team and this affected the speed with which projects could be implemented.

The quality of the staff recruited was also an important factor in strong implementation. In particular, employing staff with good local knowledge was important for a number of reasons. First, there was a benefit in employing staff who knew how fire brigades operated and who (preferably) knew the personalities involved. This was felt to be advantageous when trying to raise the profile of a project in the brigade and for drawing upon help from contacts with specialist areas of knowledge. Second, projects that involved partnership working benefited from employing staff with good contacts in other agencies. This was felt to speed up the initial process of knowing whom to contact, meant that formal processes (that could be overly bureaucratic) could sometimes be circumvented, thereby assisting rapid implementation. Third, employing staff with good knowledge of the geographical area was helpful as they were likely to know the 'hotspot' locations and to have a perception of the general local problems that existed.

### ***Steering groups***

Some projects established steering groups to oversee the work being implemented. These served a number of purposes, including holding the project manager to account on the direction of the project and assisting with the alleviation of barriers to implementation. Box 2 provides an example of what Sutton (1996) called a 'consultative' steering group, characterised by an appropriate level of interest and a true dialogue between project staff and steering group.

#### **Box 2: Establishment of a Steering Group: The Merseyside Ethnic Minorities Arson Awareness and Reduction Team**

In order to direct the activities of the project team, a Steering Group consisting of both fire safety and local community representatives was established through the brigade's Equal Opportunities Department. The make-up of the group was important for understanding the intricacies of the problem and for establishing links with the community representatives that would allow the project to progress. More than 30 organisations are represented on the Merseyside Steering Group, including women's groups, health workers, social workers, community development teams, housing associations, cultural centres, religious groups, government offices and fire service groups. Clearly the nature of these groups facilitates a wider community safety approach rather than just fire safety. The Group meets quarterly to discuss the project and to assist with introductions to other useful contacts. The members meet in community venues where the meetings are open to all. This has proved essential to provide a sense of community ownership of the scheme. Members of the group also provide advice and assistance outside the formal meetings and this has proved extremely useful to the project.

### ***Developing strong partnership working***

The fact that all 31 projects evaluated identified closer working between the police and other organisations as a capacity building intervention they were implementing gives an indication of the importance attached to partnership working. Indeed, improved partnership working was a recurring theme in the projects examined, with a recognition that, when it worked well, more could be achieved by working in partnership than working individually.

There were, however, a number of projects that experienced difficulty in developing partnerships. One problem involved convincing partners that arson was a problem, while others found that the procedures of other organisations could be over-bureaucratic. The key would appear to have been to identify individuals operating at the appropriate level, with the necessary authority to be able to make decisions, without reference back to the line-management structure.

### ***Initial scepticism from within***

Several projects noted that colleagues had initially been sceptical about arson reduction activity. This was viewed by some as an easy option and as a distraction to the *real* operational work of putting out fires.

## **DELIVERING INTERVENTIONS**

Once the projects were established, there would appear to have been a number of important factors that affected the extent to which interventions were implemented.

### ***Geographic size of area***

A number of projects were located in large, sparsely populated areas. These reported that, with a small team, it was difficult to cover the entire area. One project noted how there were 17 Crime and Disorder Partnerships (CDRPs) with which to liaise, which increased the complexity of implementation.

### ***Capacity building versus other interventions***

As noted in the previous section, capacity building formed a large proportion of the interventions undertaken by projects. These were expected to have an indirect, long term effect on arson problems. As such, it was important to balance these interventions with those that had a more direct impact on arson, which would reap dividends in the short term. While capacity building interventions are important, the focus on these by some projects meant it was difficult to measure their impact within the life of the evaluation.

### ***Understanding the 'mechanism' of intervention***

The 'mechanism' of intervention refers to the process by which it will lead to a reduction in arson. The 'intervention themes' in Tables 3 to 5 provide an indication of how individual interventions operate. For example, the mechanism for reducing arson associated with increased police patrolling was to increase the likelihood of *detection*. Similarly, the intervention mechanism associated with vehicle amnesty schemes was the *removal of fuel*. Some of these intervention mechanisms were more direct than others. For example, removing abandoned vehicles would immediately and directly remove the potential source of fuel for arson. By contrast, the distribution of leaflets relied on a chain of mechanisms, by which recipients had to receive the material, to

read it, to raise their awareness of the problem and to take action on the basis of it. Indeed, all of the awareness raising interventions were subject to this limitation in that they relied on others to take action. This was, for example, the case with audits in schools conducted in West Yorkshire, where the ability of schools to act on the audits was limited by a lack of funds.

Another important issue associated with intervention mechanisms related to referral processes. One project that operated a programme for young people at risk of offending was reliant on referrals from other statutory agencies. When few referrals were received, the project had to reconsider its referral criteria.

### ***A clear project focus***

Projects that were successfully implemented tended to have a clear perception of the problem and of what needed to be done to address it. This was achieved by focusing resources on a small number of well-implemented interventions, thereby avoiding the 'scatter-gun' approach in which too many interventions were implemented, with too few resources.

### ***Abstractions***

Abstractions, in terms of annual leave and sickness sometimes posed a problem for projects, given the small size of the teams. There was often little resilience when a member of staff took time off work and sometimes meant that the rest of the team struggled to cope with the workload. This was particularly the case for one project where another member of the team had to cover for someone who was running a diversion programme.

### ***Exit strategies***

Exit strategies were considered by few of the projects evaluated. In some cases, this was because the project was still implementing interventions when the evaluation fieldwork came to an end. However, in some cases, projects simply concluded when project funding ran out. In these cases, morale was felt to be low among project staff because it was felt more could have been achieved, had additional funds been available.

Mainstreaming was relatively rare within the life of the project, although one scheme in Avon did manage to continue once project funds ceased. The Avon Car Clear scheme received funding from the local authority to continue to operate, although it was recognised that the process of mainstreaming took a considerable time to achieve.

### ***Summing up the experiences of implementation***

On the whole, projects funded under the Arson Control Forum's New Projects Initiative were well implemented and generally achieved what they set out to deliver. There were a number of factors that could be considered facilitators and inhibitors to successful implementation. These are summarised in Table 6.

**Table 6: List of factors that inhibit and facilitate implementation**

<i>Implementation facilitators</i>	<i>Implementation inhibitors</i>
Detailed problem analysis	Time taken to bid for funds
Data exchange between organisations	Lack of 'working capital'
Funding of staff	Time taken to recruit staff
Staff with good local knowledge	Lack of interest among partner agencies
Consultative steering groups	Partners with overly bureaucratic procedures
Strong partnership working	Scepticism from colleagues in Fire Service
Balance of long and short term interventions	Large and sparsely populated project areas
Clarity regarding intervention mechanisms	Staff abstractions
A focus on a limited number of interventions	

# SECTION 4

## Impact of projects

### INTRODUCTION

This section examines the impact of the projects funded under the NPI. The approach to analysing impact was to initially examine each of the projects independently. This was necessary because of the clear differences between projects. Projects commenced with different start dates, tackled different kinds of fires and employed different interventions. This made any simple pre / post analysis problematic, although attempts are made later in this chapter to produce such statistics. Annex C contains the individual project impact analyses.

### OVERALL ASSESSMENT OF IMPACT

Impact analysis was conducted on 29 of the 31 individual projects, encompassing 23 brigades. Of the 23 brigades listed in Table 2, no impact analysis was conducted for just one brigade - Greater Manchester. This was on the grounds that by the end of the project, a great deal of scanning and analysis had been completed and implementation was dependent on additional funding commencing beyond the evaluation period. Merseyside had two projects in the programme, but one was excluded from the analysis on the grounds that it was not expected to show a result within the lifetime of the evaluation.

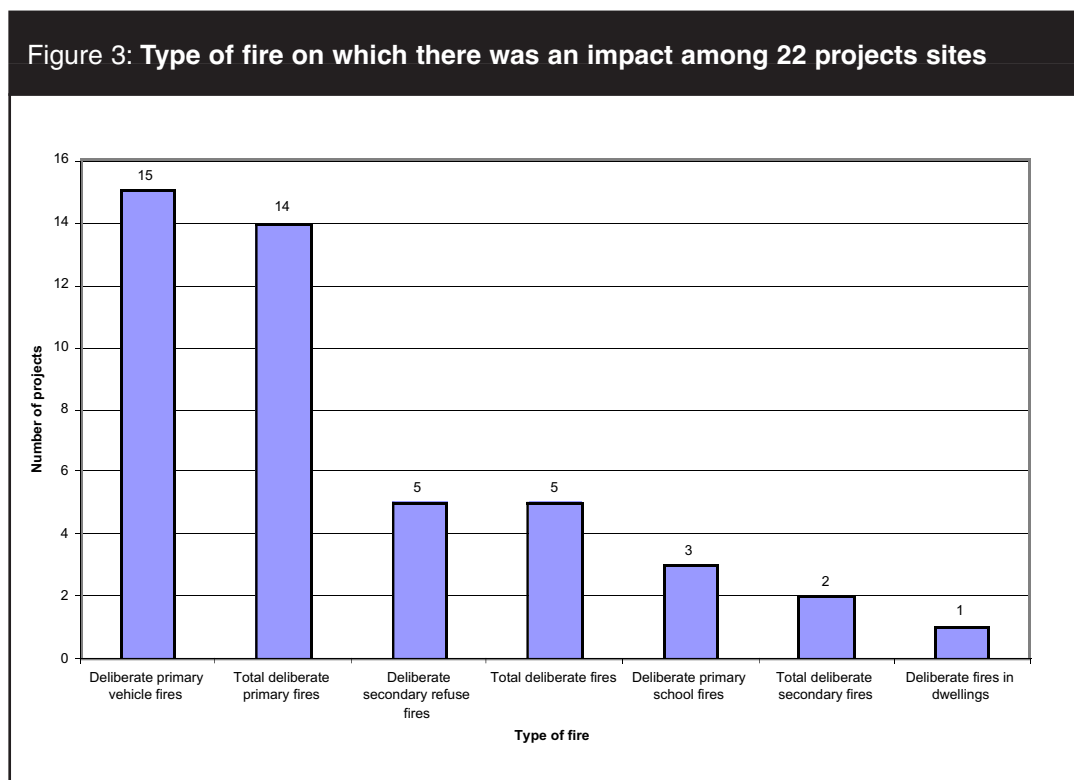
The multiple projects in Cheshire, Hampshire, London and West Yorkshire were treated as single project sites for the purposes of this analysis as examination of the process of implementation suggested it would be difficult to separate the impact of individual projects.

Furthermore, the two Avon projects, and the two Dorset projects were analysed separately as they involved different time periods and different locations. The project that covered Cornwall and Devon was analysed as two separate counties on account of the fact that each were in a different Brigade Family.

As a result of the various changes made to the project sites there were a total of 24 separate impact analyses undertaken. Annex C contains the individual site impact analyses. These suggest that most projects were associated with an impact of some kind. Of the 24 project sites analysed 22 (92%) were associated with a positive impact. Only projects in Cumbria and West Sussex were not associated with an impact during the life of the evaluation. In Cumbria, a project that focused on conducting fire audits for rural businesses and farms, the risks of fire for the locations examined were low in the first instance, so there was limited scope for further reductions. In West Sussex, a project that involved working with a small group of youths at risk of perpetrating arson, the dosage of intervention was relatively light and could not necessarily be expected to show an area-impact using the measures available.



Figure 3 shows the types of fire where an impact was experienced. It should be noted that some projects tackled more than one type of fire, so the total will add to more than 22 (the number of projects showing an impact).



As Figure 3 indicates, projects most frequently had a positive impact on deliberate primary vehicle fires and on total deliberate primary fires. Smaller numbers of projects had an impact on deliberate secondary refuse fires, while a number of projects (where primary and secondary fires could not be separated from the available data) had an impact on deliberate fires overall. Given the predominance of projects that tackled deliberate vehicle fires and deliberate primary fires overall, further analysis was conducted on each of these.

### IMPACT ON TOTAL DELIBERATE PRIMARY FIRES

Aggregate analysis was conducted to examine the trend in total deliberate primary fires over time. This was complicated by the fact that all projects had different start and end dates. Analysis therefore involved capturing data for the 12 months prior to implementation for each project and 18 months post implementation. Although each project had different start dates, treating the data as months  $\pm$  a given start date meant that it was possible to aggregate projects to create a 'virtual' pre / post aggregate intervention period. This exercise was repeated for the specific comparison area selected for each of the projects. This meant that no comparison data were used more than once, which could have skewed the results.

**Figure 4: Trend (with three month moving average) in total deliberate primary fires in aggregated target areas (19 sites included) and aggregated comparison areas: 12 months prior to implementation for each project and 18 months post implementation**

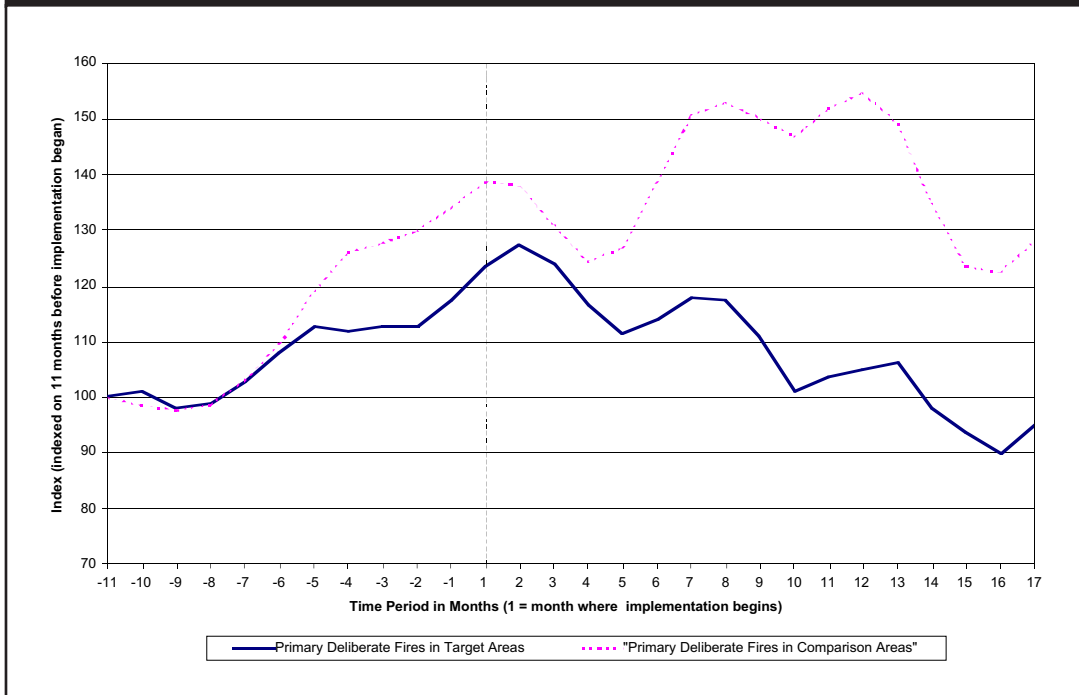


Figure 4, which is based on data from 19 project sites, shows that the gap between the target areas and their associated comparison sites widened significantly over the duration of the projects, suggesting a marked impact overall. In particular, there would appear to have been a major decline after around the eighth month following the start of implementation. Examining the 12 months pre / post intervention, these projects experienced an overall increase of eight percent, compared to a 27% increase in the comparison area. Comparing the 12 months pre intervention with the period from 6-18 months post implementation, the respective figures were -2% and +27% for the target and comparison areas.

The projects included in Figure 4 were selected on the basis of data availability for the type of fire concerned and for the time period examined. However, not all of these would have experienced an impact on total deliberate primary fires. From analysis of the impact of projects in Annex C, there would appear to be 14 that had an impact on total deliberate primary fires. Table 7 shows the projects concerned, as well as providing the scale of the impact. Seven of the projects showed an impact by virtue of reducing total deliberate primary fires, while in seven, the rate of increase was slower than expected<sup>13</sup>. For each project, low and high impact estimates were calculated for projects, as described above. Summing these estimates suggested that the 14 projects were associated with a reduction of between 1,046 and 4,251 deliberate primary fires.

Table 7 also includes what has been termed a 'Certainty Score'. This Certainty Score indicates the number of comparison sites upon which the estimate of reduction is calculated. A Certainty Score of 1 means that the performance in the target area was only better than one comparison area. A Certainty Score of 4 would mean the target

<sup>13</sup> This includes two where there was no change pre / post but where there were increases in comparison areas.

area performed better than four comparison sites. This Certainty Score was felt necessary given the fact that different projects had different numbers of comparisons and meant that a means of judging the veracity of the findings was needed.

<b>Table 7: Projects associated with an impact on total deliberate primary fires</b>					
<i>Project</i>	<i>Percentage change in target area</i>	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>	<i>Certainty score (number of positive comparisons)</i>	<i>Time period</i>
Avon (Rest of Brigade)	-12	-200	-676	3	12 months
Bedfordshire	21	121	-20	1	12 months
Cheshire	15	101	-318	1	12 months
Cornwall	-7	-17	-117	3	6 months
<i>Only six months of pre intervention data available.</i>					
Devon	0	7	-139	2	6 months
<i>Only six months of pre intervention data available.</i>					
East Sussex	0	-66	1	10 months	
<i>Comparison made to just one area. Only ten months of post intervention data available.</i>					
Hampshire	-8	-21	-126	2	9 months
<i>Only nine months of pre intervention data available.</i>					
Lancashire	3	-129	-803	3	12 months
London	-19	-783	-1092	2	12 months
Merseyside	-14	17	-74	2	7 months
<i>Only seven months of post intervention data available.</i>					
Mid and West Wales	7	31	-403	3	12 months
North Wales	-12	-51	-100	4	12 months
Shropshire	-13	-109	-280	3	12 months
South Wales	5	-13	-37	4	12 months
<b>Total</b>		<b>-1046</b>	<b>-4251</b>		

As Table 7 shows, just three projects had a Certainty Score of 1, while seven had a score of 3 or more. These figures suggest that, on the whole, the impact analysis for total deliberate primary fires was relatively robust. Further analysis was undertaken on projects with a Certainty Score of 2 or more on the basis that the findings associated with these projects were more robust than those associated with a Certainty Score of 1. This analysis suggested that in the remaining 11 projects there were between 1,268 and 3,847 fewer deliberate primary fires.

## **DELIBERATE PRIMARY VEHICLE FIRES**

Similar analysis was conducted for deliberate primary vehicle fires. Figure 5 shows the trend in deliberate vehicle fires in the 12 months prior to intervention, with the 18 months post implementation for 16 projects on which data were available. The chart shows that deliberate vehicle fires increased in both the target areas and in the comparison areas following the commencements of the projects. However, the scale of increase was lower in the target areas than that experienced in the comparison area. In the year following the start of intervention, deliberate primary vehicle fires rose by 20%, compared to a 29% increase in the comparison areas (giving a nine percentage point difference). As with total deliberate primary fires, there was an improvement in performance in the period from six to 18 months following the implementation of

projects. During this period, deliberate vehicle fires rose by 16% in the target areas (compared to the 12 months prior to intervention). By comparison deliberate primary vehicle fires in the comparison areas rose by 27% over the same period (giving an 11 percentage point difference between target and comparison areas).

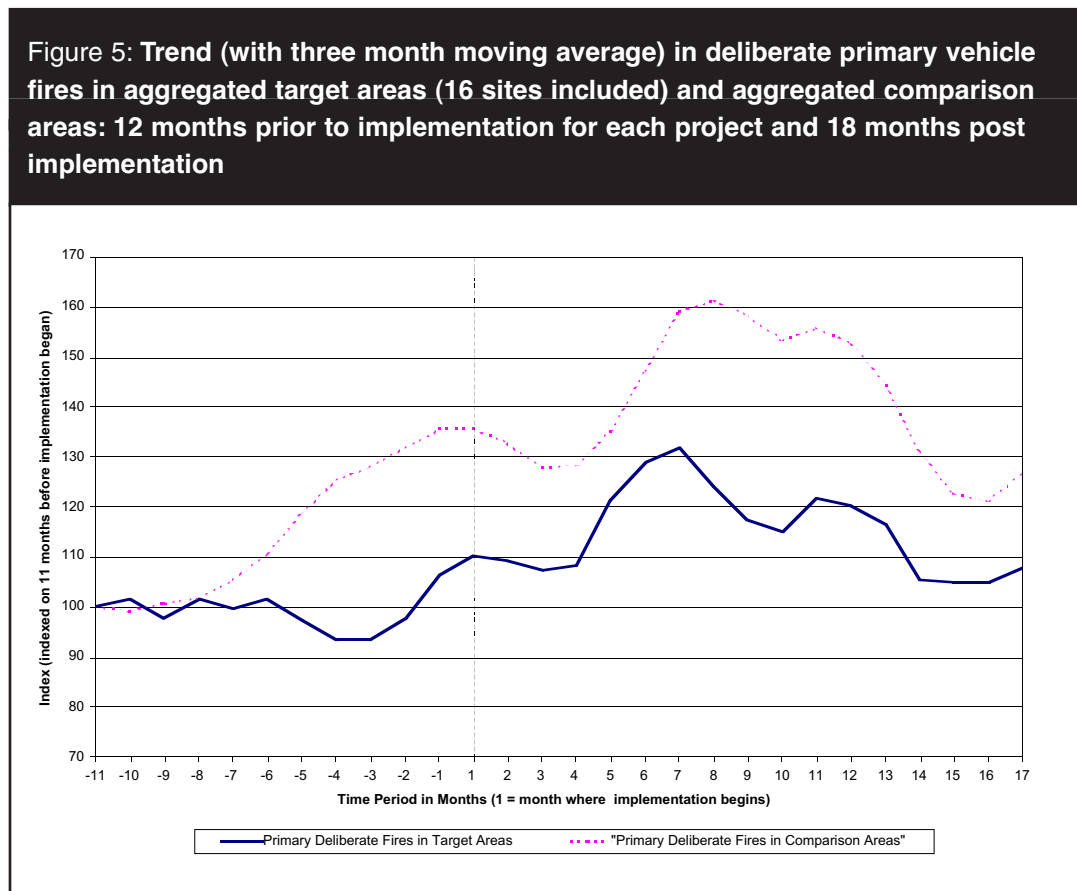


Table 8 examines the impact associated with the 15 projects that exhibited a reduction in deliberate primary vehicle fires. Overall, these projects were associated with a combined reduction of between 672 and 2,690 deliberate vehicle fires. The largest reductions were observed in Avon, London and Swansea (Mid and West Wales), which together accounted for approximately two thirds of the reduction observed.

Where the robustness of the findings is concerned, Table 8 indicates that there were five projects that showed an impact in relation to just one comparison area (indicated by a Certainty Score of 1). The results were re-examined with these excluded and showed that the combined reduction was between 941 and 2,329 fewer fires.

**Table 8: Projects associated with an impact on deliberate primary vehicle fires**

<i>Project</i>	<i>Percentage change in target area</i>	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>	<i>Certainty score (number of positive comparisons)</i>	<i>Time period</i>
Avon (South Bristol)	19	21	-6	1	12 months
Avon (Rest of Brigade)	-13	-198	-630	3	12 months
Bedfordshire	21	87	-40	1	12 months
Cheshire	23	97	-142	1	12 months
Devon	27	64	-57	1	6 months
<i>Only six months of pre intervention data available</i>					
Cornwall	7	8	-56	2	6 months
<i>Only six months of pre intervention data available</i>					
East Sussex	-19		-116	1	9 months
<i>Comparison made to just one area. Only ten months of post intervention data available</i>					
Hampshire	-20	-22	-41	4	12 months
London	-22	-659	-886	2	12 months
South Wales	8	77	-23	3	12 months
Northumberland	-5	-3	-171	3	12 months
Shropshire	-3	-65	-141	3	12 months
Mid and West Wales	5	9	-259	3	12 months
Tyne and Wear	-53	-20	-31	5	12 months
North Wales	-16	-68	-91	4	12 months
<b>Total</b>		<b>-672</b>	<b>-2,690</b>		

## SUMMING UP THE IMPACT

Overall, the results of the ACF New Projects Initiative are very encouraging. Of the 24 project sites examined, 22 showed a reduction in arson when compared to other areas.

The largest identified reductions were in relation to total deliberate primary fires and deliberate primary vehicle fires. After 18 months intervention, total deliberate fires were estimated to have fallen in the target area by two percent, compared to increases of 27% in the comparison areas. The reduction in total deliberate primary fires in the 14 areas showing a reduction amounted to between 1,046 and 2,051 fewer incidents per year.

Deliberate primary vehicle fires overall were estimated to have increased by 16% in the 18 months following intervention in the target areas. However, there was an increase of 27% in the comparison areas over the same time period. Reductions in deliberate primary vehicle fires were estimated to be between 672 and 2,690 incidents per year.

These findings would appear to reflect the high degree of implementation success on the projects, which translated in relatively large reductions in arson. However, there remains the issue of the extent to which these results were achieved in a cost effective way. The following section examines in more detail the costs and benefits associated with ten case study sites.

# SECTION 5

## Cost effectiveness

### INTRODUCTION

This section provides the results of the cost-saving analysis of the ten case study projects. The cost-saving evaluation combined information on both costs and outcomes. The following pages examine the costs incurred by projects. In all cases, additional economic costs were included. This meant that resources provided ‘in-kind’ (and outside of budgetary expenditure) were also included, so long as they would not have been incurred on similar activity if the ACF project had not taken place. More detailed information on costs incurred in delivering each scheme can be found in Annex D.

Following the discussion on costs, the analysis focuses on the value for money offered by each of the case study areas in relation to the cost of alternative – “*what would have happened if the project had not been implemented.*” This involved linking evidence on the effectiveness of the case study projects to monetary valuation of the arson incidents prevented.<sup>14</sup> These valuations were then compared with the costs incurred in each case study area in order to determine value for money. Finally, the sensitivity of the results were examined by varying key cost assumptions. This highlighted the limitations of the research in valuing all likely project-related outcomes.

### COSTS

Table 9 presents the costs associated with each of the ten case study projects. The total economic cost for these interventions was approximately £2.8 million. This cost represents the economic valuation of resources diverted from other activities. Broadly, those interventions that had a focus on vehicle arson (Avon Car Clear, Luton Arson Task Force and Swansea VARI) were the most expensive while the fire investigation training at Shropshire and the audit schemes operating at Cumbria and West Yorkshire were generally, the least expensive.

Set-up and ongoing costs are also presented in Table 9. Set-up costs relate to those activities undertaken prior to the schemes implementation. In relation to the case studies (and the NPI projects more generally), these activities relate mainly to developing the project plan, recruitment and selection of project staff and in some cases early partnership development work. Analysis of set-up activity provides some indication of the extent to which project costs were ‘front-loaded’. In general, set-up costs were not significant contributors to overall project cost. Table 9 reveals that for the ten case studies, set-up costs varied between 0% and 18% of total project cost, with an average of less than 5%.

<sup>14</sup> Valuations are drawn from Dennison. S., (2003)

Since set-up costs relate to mainly one off (or at least infrequent) activity, they are less relevant to long-run decision making. However, the ongoing costs per month presented in Table 9 do present a useful basis upon which to estimate long-run implementation costs, and provide useful comparators for both project output and outcome measures.<sup>15</sup>

<b>Table 9: Costs for each project period</b>					
	<i>Set-up Cost (£)</i>	<i>Ongoing Cost (£)</i>	<i>Total Cost (£)</i>	<i>Duration of ongoing period (months)</i>	<i>Cost per month for ongoing period (£)</i>
Avon <sup>16</sup>	5,752	582,745	588,479	17	34,279
Cumbria	1,847	42,190	44,037	12	3,516
Bedfordshire	11,595	1,090,232	1,101,827	29	37,594
Merseyside	11,779	103,236	115,015	12	8,603
Northumberland	35,137	160,153	195,290	36	4,449
Shropshire	0	33,626	33,626	3	11,209
South Tyneside	14,610	219,558	234,168	18	12,198
Mid & West Wales	29,855	230,087	259,942	33	6,972
West Sussex	17,553	93,767	111,320	12	7,814
West Yorkshire	5,153	107,364	112,517	24	4,474
<b>Total</b>	<b>133,281</b>	<b>2,662,958</b>	<b>2,796,221</b>	<b>191</b>	<b>13,942</b>

In terms of cost per output, analysis of the costs revealed a cost per business audit in Cumbria of £56. Costs for similar schemes but with differing focus at West Yorkshire (schools audit) and Merseyside (private home audits) were £260 and £684 respectively. Elsewhere, the interrelated nature of a number of project interventions meant that attribution of costs to particular output measures was less reliable. Nonetheless it is possible to estimate the cost of removing an abandoned vehicle to be between £30 and £80, based upon data from Avon, Luton and Northumbria. Additional information of project costs and outputs for each intervention are presented in Annex D.

In addition to time, the distribution of costs can also be considered according to the type of resource consumed. Table 10 reveals the costs by type for each of the case study schemes. There is remarkable consistency in patterns of expenditure although there are a few notable exceptions. While personnel costs represent the most significant resource in most schemes, the vehicle schemes operating at Luton and Avon incurred substantial 'other' costs associated with vehicle removal fees paid to contractors. Elsewhere, higher than average (but not unexpected) training and travel costs were found for Shropshire and Cumbria respectively.

The significant personnel costs incurred at West Sussex, Merseyside and West Yorkshire reflect the liaison-type activity conducted by the arson co-ordinator / auditors and partner agency staff at these sites.

<sup>15</sup> This of course assumes that ongoing costs are fairly constant across time. In most cases this seems a reasonable assumption since, for example, core staff are salaried, line managers and partners agencies often meet on a regular basis, and budgeted expenditure overall is, pro rata, fairly consistent.

<sup>16</sup> The costs for Avon include all 'South Bristol' and 'rest of Avon' activity between November 2001 and March 2003

**Table 10: Project Costs By Type**

	<i>Total</i>	<i>Per-</i>	<i>Premises</i>	<i>Travel</i>	<i>Publicity</i>	<i>Other</i>	
	<i>(%)</i>	<i>sonnel</i>	<i>&amp; equip</i>	<i>(%)</i>	<i>(%)</i>	<i>(%)</i>	
		<i>(%)</i>	<i>Training</i>	<i>(%)</i>	<i>(%)</i>	<i>(%)</i>	
			<i>(%)</i>	<i>(%)</i>	<i>(%)</i>	<i>(%)</i>	
Avon	588,479	56.2	0.3	2.4	2.4	0.4	38.3
Cumbria	44,037	69.4	2.1	4.8	15.9	0.5	7.3
Luton/Bedfordshire	1,101,827	25.8	0.4	0.4	0.4	3.1	69.9
Merseyside	115,015	89.3	0.0	5.6	0.5	3.1	1.5
Northumberland	195,290	65.1	2.5	6.7	2.0	23.0	0.7
Shropshire	33,626	40.1	50.9	0.0	9.0	0.0	0.0
South Tyneside	234,168	87.7	6.7	2.4	0.4	0.5	2.4
Swansea	259,942	71.7	0.0	7.9	2.4	5.9	12.1
West Sussex	111,320	95.6	0.9	1.3	0.0	2.1	0.0
West Yorkshire	112,517	89.7	1.2	2.9	1.5	2.9	1.7
<b>Total</b>	<b>2,796,221</b>	<b>53.0</b>	<b>1.7</b>	<b>2.5</b>	<b>1.5</b>	<b>3.8</b>	<b>37.5</b>

Finally the distribution of costs on various partner agencies was considered by identifying the degree to which these organisations provided resources 'freely' or 'in-kind'. Table 11 compares overall project costs with project funding provided by the ACF. The results show substantial leveraging-in of resources from partner agencies. Overall for every £1 funding provided by the ACF, about £3 was provided by other sources. In Luton – where the cost of vehicle removals was met from non-ACF funds – this figure rose to over £5 per £1 ACF funding. In other areas the in-kind resource relates mainly to additional fire brigade, police and local authority staff time.

**Table 11: In-kind and Other (Non-ACF) Funding**

	<i>Total cost</i>	<i>ACF Funding</i>	<i>Valuation of Resources Funded</i>
	<i>(£)</i>	<i>(£)</i>	<i>from other sources (£)</i>
Avon	588,479	113,000	475,479
Cumbria	44,037	36,000	8,037
Luton/Bedfordshire	1,101,827	180,000	921,827
Merseyside	115,015	60,000	55,015
Northumberland	195,290	64,650	130,640
Shropshire	33,626	22,000	11,626
South Tyneside	234,168	120,000	114,168
Swansea	259,942	62,000	197,942
West Sussex	111,320	30,000	81,320
West Yorkshire	112,517	76,000	36,517
<b>Total</b>	<b>2,796,221</b>	<b>703,710</b>	<b>2,092,511</b>

## COST-SAVING ANALYSIS

### *Valuing outcomes*

In Section 4 estimates were drawn on the impacts of the projects funded under the NPI. For each project a range of figures was presented reflecting the actual versus expected



impact. The Office of The Deputy Prime Minister<sup>17</sup>, building upon early work by the Home Office<sup>18</sup> has estimated the savings to society from preventing various forms of deliberate fires. Measured at 2002 price levels these estimates include<sup>19</sup>:-

- £23,347 per prevented deliberate primary fire
- £4,457 per prevented deliberate primary vehicle fire
- £144,324 and £138,912 per prevented fire in commercial and public buildings respectively
- £1,354 per prevented secondary fire<sup>20</sup>

### ***Comparing outcomes with costs***

Using monetary valuations for outcomes and the information on prevented incidents in Section 4, the impact of the projects could be estimated in monetary terms. Table 12 presents this information for total deliberate primary fires. For each project, lowest and highest impact estimates are presented in monetary terms. Since no impact was observed on total deliberate primary fires for six of the case studies (Cumbria, Northumberland, Shropshire (FIT), South Tyneside, West Sussex and West Yorkshire), these projects have been excluded. Project costs over the relevant period are also presented. These are defined as the costs of those inputs that contributed to the outcome results attained.

By comparing project costs with monetary valuations of impact, a range of savings-to-cost ratios for each case study can be obtained. These are also presented in Table 12.

The results suggest that those case study projects found to reduce deliberate primary fires did, overall, offer value for money. A savings-to-cost ratio of between 2.4 and 33.2 was found by summing the lowest and highest impacts. This suggests that, for the projects showing impact on primary fires, between £2.40 and £33.20 was saved for each £1 of total resource invested. If we include the results at the South Tyneside and West Sussex projects the results become unclear, since the overall ratio of savings-to-cost is between -1.9 and 23.4 (meaning the return on every £1 invested was between an additional cost of £1.90 and a saving of £23.40).<sup>21</sup>

<sup>17</sup> Dennison, S., (2003)

<sup>18</sup> See Weiner, M., (2001) and Roy D., (1997)

<sup>19</sup> A 2% uplift per annum has been used to approximate inflationary effects.

<sup>20</sup> No estimate was provided in the ODPM figures for deliberate secondary fires. However, Weiner (2001) estimated that on average secondary fires (of all types in 1999) cost £1,100 per incident. This figure was based upon Fire Service response costs only. Dennison (2003) later revised upwards the costs of response for non-building fires (under which secondary costs are categorised) by 16%. On this basis, secondary fires could be estimated as costing £1,354 per incident at year 2002 price levels.

<sup>21</sup> Annex C reveals that deliberate primary fires increased in both South Tyneside and West Sussex over the evaluation period. Data on all deliberate primary fires was not available for the projects at Cumbria, Northumberland, Shropshire and West Yorkshire.

**Table 12: Savings-Cost Ratios: All deliberate primary fires**

<i>Project</i>	<i>Project Cost (£)</i>	<i>Valuation of impact</i>		<i>Saving-to-Cost Ratios</i>	
		<i>Lower (£)</i>	<i>Higher (£)</i>	<i>Lower</i>	<i>Higher</i>
Avon Car Clear*	411,349	6,327,037	21,852,792	15.4	53.1
Luton	451,130	-2,824,987	466,940	-6.3	1.0
Merseyside	60,221	-396,899	1,727,678	-6.0	28.7
Swansea	83,668	-723,757	9,408,841	-8.7	112.5
<b>Total</b>	<b>1,006,368</b>	<b>2,381,394</b>	<b>33,456,251</b>	<b>2.4</b>	<b>33.2</b>

\* Figures relate to combined total for South Bristol and Rest of Avon over the period January 2002 to December 2002  
\*\* No range of outcomes was available for Northumberland

More generally, it was shown in Section 4 that 14 NPI projects could be identified with a reduction of between 1,046 and 4,251 deliberate primary fires. For these projects, this suggests a gross saving of between £24.4 million and £99.2 million. NPI funding associated with these projects totalled around £1.2 million. From Table 11, we can estimate that for every £1 of NPI funding, total input, including resources provided 'in-kind', would be around £4. Applying this assumption to the 14 NPI projects described here, suggests that their total cost would be about £4.8 million. Therefore, comparing costs and outcome valuations for the 14 NPI projects under these assumptions results in a net saving of between £19.6 million and £94.4 million.

Nevertheless, the results in Table 12 also suggest significant variation between individual projects. We now briefly turn to these variations and consider impacts on other measures described in Section 4.

### ***Avon***

The Avon Car Clear Project performed relatively strongly in reducing deliberate primary fires. For each £1 invested the returns to society from reduction in expected deliberate primary fires were estimated to be between £15.40 and £53.10. Also by comparing valuations for the reduction in vehicle related arson with the costs associated with the removal of fuel intervention only, it was possible to estimate a savings-to-cost ratio of between 4.7 and 15.4.

### ***Swansea Vehicle Arson Reduction Initiative***

In Swansea, the estimated impact of the VARI on deliberate primary fires of all kinds ranged from an additional 31 incidents to 403 fewer incidents. The associated range in the ratio of savings to cost was -8.7 to 112.5. A similar result was found for 'situational prevention' activities more directly targeted at reducing vehicle-related arson. Here, the resulting impact on vehicle crime was a saving to cost ratio ranged of between -1.5 to 68.2.<sup>22</sup>

### ***Luton Arson Task Force***

In comparison with the other vehicle focused projects at Avon and Swansea, the results of the Luton ATF project were less positive. While the impact on deliberate primary fires was mixed the project proved to be the most expensive of all the case studies. As such, the project did not offer value for money in reducing deliberate primary fires. It

<sup>22</sup> However, it could be argued that methods used in this intervention (such as placing boulders or barriers to block vehicles from being abandoned) would have longer-term benefits than the 'removal of vehicles' approach at both Luton and Avon.

should be noted however, that the impact did improve when comparisons are drawn for the second year of delivery. As an indicator, comparing costs with outcomes over this period reveals a savings-to-cost ratio of between 7.0 and 7.2.

In terms of impact on deliberate primary vehicle fires, the project did not offer value-for-money under any of the comparison years ('highest' year one ratio of 0.5, and 0.9 in year two).

### ***Northumbria Arson Reduction Co-ordinator***

Although no figures were available for deliberate fires primary fires in Northumberland in Section 4, it was noted that the project had positive impact on deliberate vehicle fires (primary and secondary). If we assumed, for example, that half the observed impact related to primary fires, then an average cost per fire of £2,906 would suggest a range in savings-to-cost ratio of between 1.5 and 84.6 for this intervention.

### ***Merseyside***

Of the projects broadly focusing on arson audits, only Merseyside was deemed to have had an impact on deliberate primary fires. The resulting impact ranges between a cost of £457,120 and a saving of £1,667,457. However, if (as was the focus of the project) only deliberate primary domestic fires are considered, then a saving is made of between £367,241 and £772,205.

### ***West Yorkshire***

Annex C reveals that the West Yorkshire Joint Fire and Police School Arson Reduction Initiative / Arson Audits resulted in between 2 and 38 fewer fires within school buildings. Deliberate primary fires in public buildings were previously estimated to have cost society on average £138,912 per incident. This suggests a savings-to-cost ratio of between 5.2 and 98.3 based on the comparison with the relevant costing period. It should be borne in mind, however, that this figure does not include the costs incurred by schools in implementing recommendations made by the auditors.<sup>23</sup>

### ***Other projects***

Finally, it was noted in Section 4 that the projects at Cumbria, South Shropshire and West Sussex did not result in any impact during the period of this evaluation. Furthermore, while the project in South Tyneside resulted in some impact for a specific target location (Simonside), the data obtained from the project did permit the identification of resources used in this target location alone.

## **SENSITIVITY**

The key results of this section are presented through a range of saving-to-cost ratios for the various case study projects. In most cases, the ranges are broad but do act to provide a 'feel' for the likely value for money offered by the case study projects. Nevertheless a number of additional factors do seem pertinent to a discussion on the sensitivity of the results found.

<sup>23</sup> No information was available from the West Yorkshire project on whether recommendation made had been implementation. It was suggested, however, that costs would vary widely depending on the type of recommendation (for example, CCTV compared to smoke alarms) and other factors, such as the size of the school.

Firstly, the savings-to-cost ratios presented in this section do of course depend heavily on the monetary valuations of the various types of fires. Using average costs for various types of fires is useful in that it identifies the scale of the problem; however accuracy is limited by the broad scope of the fire categories chosen. The actual costs of individual fires will, ultimately, vary according to factors such as the size of fire, location and the number and type of injuries suffered.

We should also expect variation in the average costs of deliberate fires at the aggregate level. Earlier work by the Home Office provided 'working' estimates for ranges of the costs of fire later developed by Dennison (2003). For example, primary domestic building fire costs could be 12% higher than those stated. Similarly public sector building fires could be 50% lower or 7% higher. However it should be noted that applying these assumptions to, for example, the Merseyside and West Yorkshire projects would alter the magnitude of the results found, but not the overall 'decision'. It was also noted in Section 1 that the valuations derived by Dennison (2003) (and used in this research) do not internalise all relevant costs. For example, there is no inclusion for the impact of fires on the local environment, including homes and businesses that may be indirectly affected.

Secondly, some schemes suggested that the time limits of the pilot schemes did not allow for them to "get fully going". This suggests greater productivity over the medium to long term with associated impacts on savings-cost ratios.

Thirdly, while every effort has been made to conduct a comprehensive costing approach, the information presented remains only a best estimate of the resources consumed by each project.

Finally, the complexity and interrelated nature of many of the project interventions meant that attribution of costs to individual interventions was difficult. In particular it should be noted that, no apportionment of capacity building costs were included in deriving the costs of interventions such as the 'removal of fuel'. Clearly in many of the case studies, capacity building activities underpinned most or all of the other interventions they delivered. As such, the costs of these remaining interventions (used to derive saving-to-cost ratios) may be somewhat understated. However, it is unlikely, given the magnitude of the results found, that this would effect on the overall thrust of the results discussed above.

## **SUMMING UP THE COST SAVINGS**

This section presented the results of the economic evaluation of the ten case study areas. Where analysis of costs was concerned, the findings revealed that the NPI was a relatively small proportion of the total cost of projects, accounting for approximately one third of all costs.

A breakdown of how costs were distributed showed that start-up costs were very low. On average, only 5% of the costs were associated with the start-up phase. This suggests that most of the costs are on-going and means that continued implementation of projects will require on-going funding. Over half of the costs were associated with staff salary costs, which underlines the focus of expenditure on employing staff, rather than on 'working-capital' associated with the day-to-day running of projects.

Costs were then compared with monetary valuations of reductions in various forms of deliberate fires. In each instance, a range of savings-to-cost ratios were presented. The results obtained support the conclusions drawn in Section 4. Overall, for the case

study schemes that positively impacted on deliberate primary fires, savings of between £2.40 and £33.20 were obtained for every £1 of total resource invested. However, when including the projects at South Tyneside and West Sussex, which revealed negative impacts on deliberate primary fires, it became unclear whether savings would be made. Nevertheless, using assumptions about actual versus budgeted costs and information presented in Section 4, it was estimated that for all NPI projects having impact on deliberate primary fires, the total net savings made ranged from £19.6 million to £94.4 million.

There was however significant variation in results at the individual project level. In a number of projects, notably Avon and Swansea, substantial potential savings were revealed when costs were compared with the 'higher' estimate of impact. In others, such as the Merseyside Ethnic Minority Awareness project, savings were identified when costs were compared with outcomes associated with the specific project focus.

Finally, it is important to note that the results presented in this section are dependent upon a number of assumptions used in the derivation of outcomes and cost figures. However, we contend that despite the inherent uncertainties associated with these assumptions, overall, the results do give a useful indication of the likely scale of impact (in monetary terms) of the NPI projects.

# SECTION 6

## Conclusions and recommendations

### INTRODUCTION

This section sets out the lessons learned from examining the 31 projects included in the evaluation of the Arson Control Forum's New Projects Initiative. The following pages therefore summarise the main findings, as well as covering the recommendations for future policy and practice.

### SUMMARY OF FINDINGS

The New Projects Initiative would appear to have been associated with generally strong implementation across the programme. The majority of projects delivered what was set out in their original bid. This achievement should not be understated. Previous examples of centrally funded programmes designed to tackle specific types of crime have been characterised by relatively high levels of implementation failure. The fact that this did not happen in the New Projects Initiative bears testament to the hard work of those involved in the projects, as well as suggesting that some of the lessons from previous programmes have been learned.

#### *Description of projects*

The 31 evaluated projects were located in 23 separate brigade areas and, together, these projects set out to implement a total of 280 interventions, averaging eight interventions per project.

A classification of interventions was developed, consisting of 35 individual interventions. 'Capacity building' was the most common type of intervention associated with projects. These accounted for 121 (43%) of all interventions and commonly involved improved partnership working, additional research and analysis and improved co-ordination of existing work. The next most common types of intervention were those associated with awareness raising and removal of fuel.

Overall, projects delivered the interventions as planned. By the end of the project, 250 (89%) of the 280 interventions were either completed or on-going. There were relatively few interventions that failed to get off the drawing-board, or failed to be implemented.

### EXPERIENCES OF IMPLEMENTING PROJECTS

Strong implementation resulted from a number of factors. Firstly, many projects devoted considerable effort to scanning and analysis of local arson problems and one

of the by-products of this has been improved data systems and improved data sharing between agencies.

In setting up projects, implementation was facilitated by strong partnership working and by strong steering groups in some areas. However, the initial project set-up phase was hampered in some areas by the time it took to notify projects that funding was available and by problems associated with the recruitment of suitable staff.

Once implementation commenced, projects were facilitated by a clear focus on specific arson problems and many avoided the ‘scatter-gun’ approach in which limited resources were spread too thinly. Furthermore, the fact that many projects used funding to employ or second dedicated staff was probably a key factor in implementation success as this allowed the team to focus on the project without the distraction of other areas of work. However, there appeared to be a need for a balance between funding staff and making sufficient funds available for the day-to-day running of projects. In some cases, a lack of funds meant that additional fund-raising was necessary.

## **IMPACT OF THE PROGRAMME**

The New Projects Initiative was associated with a high degree of impact. Projects were evaluated on a case-by-case basis, with different types of analysis being undertaken dependent on the types of fire tackled and on the method of implementation. A summation of the individual project impacts indicated that 22 (out of the 24 examined) were associated with a positive impact.

Projects were most frequently associated with an impact on total deliberate primary fires and on deliberate primary vehicle fires with 14 and 15 projects respectively showing an impact.

## **COST EFFECTIVENESS**

Analysis of the costs associated with the ten case studies revealed that the funding provided by the NPI was a relatively small proportion of the total cost of projects, accounting for approximately one third of all costs.

A breakdown of how costs were distributed showed that start-up costs were very low. On average, only 5% of the costs were associated with the start-up phase. This suggests that most of the costs are on-going and means that continued implementation of projects will require on-going funding. Over half of the costs were associated with staff salary costs, which underlines the focus of expenditure on employing staff, rather than on ‘working-capital’ associated with the day-to-day running of projects.

Where cost-savings were concerned, analysis of four case studies where analysis was available on total deliberate primary fires revealed a positive cost saving ratio. These projects were estimated to have saved between £2.40 and £33.20 for every £1 invested. Extrapolating these results to the 14 projects that showed a reduction in total deliberate primary fires resulted in a net saving of between £19.6 million and £94.4 million for the projects concerned.

## RECOMMENDATIONS

As far as recommendations are concerned, there is relatively little that would need to be changed from the current approach. On this basis, one of the key recommendations must be to continue to fund projects in this way as an effective means of tackling arson. The following recommendations should therefore be considered as minor 'tweaks' to the current system.

- **Shorten the bid approval process.** There would be benefit in shortening the time between the submission of bids and the notification of approval, in order to maintain a momentum behind projects and to commence implementation as quickly as possible.
- **Balancing the use of funding.** While the employment of dedicated staff to a project is likely to be a key factor in the success of projects, funding should also be made available for 'working-capital' necessary to implement planned interventions.
- **Focus on specific problems.** It is apparent that projects operate best when focused on specific geographic areas, specific populations or specific problem types (e.g. vehicle fires, or refuse fires). These are likely to be more successful than those that spread implementation across all problem types or across the entire brigade area.

## CONCLUDING REMARKS

Given the high degree of implementation witnessed on the programme and the subsequent impact on arson problems, the Arson Control Forum's New Projects Initiative would seem to have been a cost-effective use of funding and there would seem to be benefit in continuing to support the programme in future.



# References

Barker, A. (1994) 'Arson: A Review of the Psychiatric Literature' Institute of Psychology Maudsley Monographs. Oxford University Press, Oxford.

Bullock, K., Farrell, G. and Tilley, N. (2002) 'Funding and Implementing Crime Reduction Initiatives' Briefing note 3/02 London: Home Office

Dennison, S., (2003) 'The Economic Cost of Fire: Estimates for 2000', Central Economic Advice Division, Office of Deputy Prime Minister

Edmunds, G. (1978) 'Judgements of Different Types of Aggressive Behaviour'. *British Journal of Social and Clinical Psychology*. 17, 121-5

Prins, H., Tennent, G. & Trick, K. (1985) 'Motives for Arson (Fire-Raising)'. *Medicine, Science and The Law*, 25, 275-8.

Roy D., (1997) 'The Cost of Fires: A Review of The Information Available' London: Home Office

Sutton, M. (1996) 'Implementing crime prevention schemes in a multi-agency setting: aspects of process in the Safer Cities programme' Home Office Research Study 160. London: Home Office

Weiner, M., (2001) 'The Economic Cost of Fire' (Home Office Research Study 229) London: Home Office

Wilson, J.Q. & Kelling, G.L. (1982) 'Broken Windows: The Police and Neighbourhood Safety' *The Atlantic Monthly*, March 1982 pp.29-38

# ANNEX A

## Project Summaries

### (Non-Case Study Sites)

#### CHESHIRE ARSON TASK FORCE

##### ***Background Information***

Cheshire is a small county with a population of just under 674,000 people. Macclesfield is the largest town in the county and has a population of 150,000. The county has an aging population with a lower than average proportion of 15-30 year olds. Macclesfield is relatively prosperous, falling within the bottom quartile of social deprivation. The other five areas that make up the county (Vale Royal, Chester, Crewe & Nantwich, Congleton and Ellesmere Port & Neston) have populations between 122,000 and 81,000. Ellesmere Port has a relatively high number of residents within the top ten percent of deprived wards in the country but is a largely prosperous district. The victimisation rate in Cheshire reflects the national average, with an average of 21% of households being victims of crime in both 2001/02 and 2002/03.

##### ***The Nature of the Problem***

Whilst a relatively prosperous area, Cheshire does have some urban areas where problems of crime and disorder occur. Furthermore, the incidence of such problems has been increasing in recent years. Between 2000 and 2001 deliberate fires increased by over 60%. The most significant increase in deliberate fires was in relation to vehicle fires, which increased from 517 in 2000 to 740 in 2001. There have also been a number of major property fires in schools, commercial premises and businesses that have resulted in huge financial costs.

##### ***The Project***

In response to the growing problem of arson in the county, a bid was successfully made to the ACF to improve the identification and detection of arson offences and to decrease deliberate fire setting through an Arson Task Force comprising police and fire personnel. The project commenced in September 2001 with the appointment of a police detective constable to the team and a divisional fire officer.

Although a number of direct interventions were introduced through the scheme, the team largely sought to achieve its targets through a variety of capacity building interventions which were designed to provide the Service with tools to affect a sustainable reduction in deliberate fire setting. These strategies are outlined below.

- *Increased co-ordination between the police and fire services.* Aside from the establishment of the project team (which included both fire and police personnel), the project looked at ways of strengthening the services' links. This included the development of joint protocols, joint training for the two services in

fire investigation, joint working at suspected arson scenes, and better data exchange in regard to fire incidents. Police 'notification' forms were used by the police liaison officer to abstract intelligence from scenes and these were sent to the appropriate divisions. Between September 2001 and December 2003 there was coordination between the police and fire service in the investigation of over 270 incidents.

- *Facilitating the ability of local brigade areas to deal with arson issues.* A significant part of the project involved analysis of specific arson problems using various IT systems such as GIS crime mapping. This was used to produce maps for the 24 brigade areas in Cheshire, showing where incidents of arson concentrate. Charts were provided on a bi-monthly basis, enabling areas to target fire reduction resources on the basis of accurate information in line with the National Police Intelligence Model.
- *Strengthening relationships with partner organisations.* The team also invested time in developing relationships with partnership organisations. Such organisations included the Government Office North West (who funded fire investigation training and equipment), crime and disorder partnerships, local councils, housing associations, social services and the DVLA. The fire service was also represented on the 'Multi-Agency Public Protection Body', which assisted in the identification of potential arsonists. Representation on the body also led to strengthened relationships with the probation service, the prison service, the police and mental health services.
- *Interventions to address specific problems.* The Team also initiated interventions aimed at specific problems. Areas addressed included:
  - *Bonfires.* In response to the number of bonfires that were deliberately ignited every year (previous to the intended night), the team implemented a bonfire removal scheme in identified hot spot areas (November 2002 and 2003).
  - *Vehicle crime.* Leaflet campaigns targeted identified hot-spot areas, there were increased police patrols in high-risk areas and the establishment of a joint procedure for the removal of abandoned vehicles between the fire service and local councils. 'Project Autocrime' was launched in September 2002 to tackle vehicle fires in the two most problematic areas: Ellesmere Port and Chester. This project included high profile operations to remove untaxed and unlicensed vehicles; interventions to increase public awareness; target hardening activities; analysis and evaluation using GIS mapping systems; and data sharing improvements with Quality of Life and Environment Task Groups, councils and police.
  - *Improved fire investigations.* In order to identify and detect more arson offences the project developed a joint training programme for police and fire personnel and encouraged the joint attendance of police scenes of crime officers and fire investigators at arson scenes. The Police liaison officer also attended serious scenes to facilitate better working practices between the two organisations and deal with the media.
  - *Wheelie-bin fires.* These were targeted through raising public awareness and providing advice on how to reduce such fires. Leaflets on this issue were also produced and distributed.

- *Arson incidents.* The team were also involved with specific arson problems, such as spates of arson in specific areas and serial arson offenders. This often took the form of working in collaboration with the police or youth offending services.

### **Outcomes**

The outcomes from this project are measured on a brigade basis in relation to specific problems, such as vehicle fires etc, as well as on a more local basis in the case of area specific projects, such as vehicle fires in Ellesmere Port.

## **DEVON AND CORNWALL ARSON TASK FORCE**

### ***Background Information***

The counties of Devon and Cornwall are predominantly rural, have a low crime rate and a low population density. The counties cover over 1,024,000 hectares of land and the main focus of the local economy is farming, though other sectors include tourism and fishing. The only towns with sizeable populations are Plymouth and Exeter, though the area is also littered with a number seaside towns such as Torquay and Newquay.

The total population of Devon and Cornwall is over a million, with over 704,000 people living in Devon and over 501,000 living in Cornwall. There is an elderly population with 41% being 50 or over, compared to just an average of 33% in England and Wales. In both counties the population density is low, with less than 1.5 people per hectare compared with 3.4 in England and Wales. Penwith in Cornwall is the most socially deprived of the 17 districts within the Devon and Cornwall area, falling in the top quartile of deprived areas, conversely the Isles of Scilly is ranked the least deprived in Cornwall falling in the bottom quartile nationally (actually 325th out of 354).

Devon and Cornwall have a low crime rate, with just 64 offences per thousand population in 2002, however this did rise to 83 offences per thousand population in 2003. The British Crime Survey (BCS 2001/02) indicated that just 16% of households were victimised, with this rising to 18% in the 2002/03 survey.

### ***The Nature of the Problem***

Between April 1999 and March 2000, Cornwall Fire Brigade recorded 285 arson incidents, these accounted for 12.4% of all fires in Cornwall. Devon Fire Brigade recorded many more, with 3,663 arsons recorded between April 1999 and August 2000, with 45% of the total number of fires being recorded as arson.

Recorded arsons in Devon and Cornwall were most common in a street/highway/road setting and were mainly vehicle and refuse fires (35%), though a further 10% of arson occurred in dwellings.

### ***The Project***

The Arson Control Forum provided £58,000 in 2001, followed by a further £60,000 in both 2002 and 2003, to fund an Arson Task Force (ATF) team, staffed by a Police Officer, a Fire Officer and a dedicated analyst. The Fire and Police Officers were recruited by September 2001 and October 2001 respectively (funding from the regional Government Office provided an analyst, with the post filled in March 2002, this post is now funded from ACF monies).

The initial goals of the ATF were to identify arson problems and fire safety across Devon and Cornwall, and raise public awareness. A strategy was then developed to co-ordinate efforts for prevention, deterrence and intervention. This focused largely upon the removal of rubbish and waste material fires and abandoned vehicles and securing derelict or empty buildings. In total, the ATF visited 34 towns and cities across Devon and Cornwall that were identified through analysis as having a problem with refuse fires and over 50 Refuse Surveys were conducted and reports provided to the District Authority.

A high visibility vehicle was also used by the Task Force (sponsored by a local Audi dealer) to raise their profile. This helped the ATF to attend 173 incidents of arson and liaise with the police in the investigation of these incidents between October 2001 and December 2003. In addition to attending incidents, training for police and fire officers in fire scene preservation and arson identification was also run by the ATF. Talks were also given to all Community Safety Partnerships and risk assessments offered to all the schools in Devon and Cornwall.

The project was also dedicated to raising public awareness of arson. Over 12,000 leaflets and 3,000 newsletters were distributed throughout the region, and there were numerous radio and press releases. Other awareness raising measures included an aide memoire card for fire officers, and the promotion of youth schemes in the area.

### ***Outcomes***

The outcomes of this project were measured by using data on deliberate fires in Devon and Cornwall and specifically those involving refuse and vehicles.

## **DORSET 1 – ARSON REDUCTION CO-ORDINATOR (BOURNEMOUTH)**

### ***Background Information***

Bournemouth is a Unitary Authority within the County of Dorset. It covers approximately 4,600 hectares, and has 21 designated conservation areas, with over 2,000 acres of parks and gardens and seven miles of beach.

The population of Bournemouth is just over 163,000, with the age group 20-24 accounting for nearly 8% (compared to just 6% in England and Wales and only 5% in neighbouring Poole); the student population no doubt boosts this age group, with 14,000 students registered at Bournemouth University in 2001/02.

Bournemouth is more deprived than Poole, falling within the second quartile of national indices of deprivation statistics (ranked 118th out of 354). Within Bournemouth there are seven wards that fall within the top quartile, being the most socially deprived in England and Wales. Boscombe West, the most deprived ward is on the coast line towards the west of the authority, and Wallisdown (the second most socially deprived ward) adjoins Poole, and has a large area of common heath land, surrounded by industrial and residential property.

Dorset as a county has a relatively low crime rate, with only 90 offences per thousand population in 2002/03 which is a rise from 79 offences per thousand population in 2001/02. The 2002/03 BCS estimates that only 16% of households experience crime, a fall from the 2001/02 estimate of 18%.

### ***The Nature of the Problem***

There were 873 deliberately set fires in Bournemouth in 2000/01, accounting for nearly 70% of all fires in Bournemouth. This was an increase from the previous year, where arson had only accounted for 60% of all fires. The majority of these deliberate fires were secondary, accounting for 70% of the total number of deliberate incidents in 2000/01.

Across Dorset it was reported that there were 1,001 deliberately set heath/grassland fires, with a significant number of these occurring in the areas of heathland in Bournemouth, close to or surrounded by built up areas.

### ***The Project***

The Arson Reduction Co-ordinator in Poole put forward a second bid to continue funding for the post, but to extend the coverage to Bournemouth in addition to Poole. The funding was awarded in April 2002, and led to an extension of the post holder's contract to June 2003 (see the previous project outline for a summary of the Poole project).

Arson was not a key priority in Bournemouth's crime and disorder strategy, but the aims were to establish an arson working group within Bournemouth, although the structure of Bournemouth's Crime and Disorder Partnership (organised geographically rather than thematically) meant that there were obstacles to overcome. In April 2003 when the Arson Reduction Co-ordinator left his post, the Arson Task Group in Bournemouth had just had its second meeting, and an attempt was being made to raise the profile of arson within Bournemouth, especially to the Police who view vehicle crime as being the primary focus of attention.

### ***Outcomes***

All fires and deliberate incidents are examined though a particular focus is on secondary incidents arson to see if there is any reduction in comparison to other areas in Dorset.

## **DORSET 2 – ARSON REDUCTION CO-ORDINATOR (POOLE)**

### ***Background Information***

Poole is a Unitary Authority situated in Dorset. It has a population of over 138,000 people, with over 20% of these being over 65. Although Poole is the principle site of Bournemouth University, the population of young people (below 30) is well below the national average, with only 33% of the population falling into this category (compared with nearly 40% in England and Wales).

Poole is a relatively prosperous area. It falls within the third quartile of national social deprivation statistics with an average ward score rank of 217 (out of 354). However, it does have two wards that are within the top quartile of most socially deprived wards in England and Wales (Alderney and Hamworthy).

Dorset as a county has a relatively low crime rate, with only 90 offences per thousand population in 2002/03 (a rise from 79 offences per thousand population in 2001/02). The 2002/03 BCS estimates that only 16% of households experience crime, a fall from the 2001/02 estimate of 18%.

### ***The Nature of the Problem***

In the period April 1998-March 1999 there were 339 calls to property fires in Poole, with 34% of these being recorded as arson. During 2000-2001 these figures had increased to 376 property fires, with arson being the recorded cause in 40%. The area has a particular problem with small heathland fires (Poole is surrounded by heathland). In 1998/99 there were with 322 recorded small fires (including rubbish and heathland) (with 78% being recorded as arson). This increased to 457 in 2000/01 (with 85% being recorded as arson). Of these fires, 22% were heathland fires and the majority of these fires occurred in or around the Albury and Cranford Heath areas.

### ***The Project***

In 2001, £62,000 was awarded to Dorset Fire and Rescue service to employ an Arson Reduction Co-ordinator. Following a lengthy recruitment campaign an officer was recruited, previously having been employed by Poole Borough Council. Due to recruitment not occurring until October 2001, an agreement was made that the contract should run for a period of nine months until June 2002.

The Arson Reduction Co-ordinator was a representative on the Arson Task Group, a working group in the Poole Crime and Disorder Partnership (the Arson Task Group is chaired by the ADO of the Fire and Rescue Service). Arson is a key priority in the Poole Crime and Disorder Strategy and the working group takes forward the objectives to reduce arson and produce an arson strategy for the area.

The Arson Reduction Co-ordinator focused on data analysis to highlight areas where arson was most prevalent and future the interventions that would be best placed to reduce it. However, due to problems with existing data collection and analytical capabilities the analysis took until February 2003 and without the security of additional funding the Arson Reduction Co-ordinator terminated his contract in April 2003 (with two months to run).

Some involvement with existing interventions occurred. Funding was diverted to the police to increase their analytical ability and provide safety equipment for heath patrols on mountain bikes. In addition to this 75 fire officers, police officers, scenes of crime officers and heath wardens were sent on a fire investigation training course run by Gardiner Associates. Further funds were set aside to sponsor a number of children from local schools to attend a Streetwise centre, providing educational sessions for local children, covering safety issues in a variety of situations including heathland and fires.

### ***Outcomes***

Arson, and particularly secondary arson, will be examined to see if there is any reduction in comparison to non-intervention areas in Dorset (including Bournemouth pre project and post project).

## **EAST SUSSEX – YOUTH DIVERSION SCHEME**

### ***Background Information***

East Sussex is located on the south coast of England. The largest towns are Eastbourne and Hastings and are home to 58% of the county's total population of 492,324. There is a large concentration of people over the age of 50 with East Sussex being home to a greater number of those aged 50 or above than the average in England and Wales.

East Sussex covers over 172,500 hectares, of which 63% lies within designated areas of outstanding beauty, it is also one of the most wooded counties in England. The East Sussex Fire Brigade also cover the Unitary Authority of Brighton and Hove, as do the East Sussex Youth Offending Team. Sussex Police cover East Sussex as well as West Sussex and the Unitary Authorities.

Much of the focus of the project was in the Wealdon district. Around 140,000 people are resident, half of them living in the district's five main towns, Crowborough, Hailsham, Heathfield, Polegate and Uckfield. Wealdon is the least deprived of the districts in East Sussex (not including Brighton and Hove). It contains just one ward in the top quartile of social deprivation statistics. Hailsham East, on the other hand, has 14 wards in the bottom quartile, with the least socially deprived ward being Crowborough St. Johns.

The crime rate in Sussex is relatively low, with just 88 recorded crimes per thousand population in 2002/03 (falling slightly from 89 recorded crimes per thousand population in 2001/02). The 2002/03 BCS estimates that 22% of households were victims of crime (a rise from 19% in 2001/02).

### ***The Nature of the Problem***

In the nine station grounds that cover the Wealden district it was noticed that deliberately started vehicle fires outnumbered accidental vehicle fires by a considerable amount, with 71% of all vehicle fires in Crowborough being started deliberately in 2001. The recorded crime figures showed that the number of thefts of a vehicle in Wealden was 392 in 2000/01 and from a vehicle 1,159. This was reported to be one of the fastest growing crimes in the area.

### ***The Project***

A total of £10,000 funding was given for a youth diversion scheme to be run in partnership with Sussex Police, East Sussex County Council, East Sussex Youth Offending Team, British Transport Police and Wealden District Council was given in 2002. The project aimed to run a diversionary scheme (Vehicle Crime Diversionary Scheme), consisting of eight sessions (one per week, lasting 2 to 3 hours each). The scheme aimed to raise awareness of the dangers and consequences of vehicle crime, with one session focusing on Arson Reduction.

The project was targeted at youths on the caseloads of the Youth Offending Team. Referrals were made through the caseworkers putting forward the names of youths who were then assessed for appropriateness by a group of officers. Initially it was planned to concentrate on young offenders from the Wealden District, but this was extended to the whole of East Sussex, due to lack of suitable candidates.

It was planned to run the scheme once, assess its appropriateness and then amend if necessary. The first set of sessions ran during March and April 2003. Of the five offenders who began the scheme only two finished, with only one having attended all sessions. This led to the weekly sessions being grouped together in an intensive two-day course, retaining all the activities, but attempting to avoid the 'drop-out' situation. The scheme was re-run in March 2004.

In addition to these two schemes, money was given to Crowborough School to fund a go-kart for use by disaffected youths, and some funds were diverted to purchase 813 smoke detectors.



## **Outcomes**

Vehicle arson over East Sussex is examined to determine any impact of the initiative.

## **GREATER MANCHESTER ARSON REDUCTION TEAM**

### ***Background Information***

Greater Manchester (GM) is a densely populated metropolitan area, with nearly two and a half million residents. Overall GM has a lower proportion of people aged 15-30 than national trends and more over 50s. However, the most densely populated area, Manchester, has a higher proportion of 10-35 year olds amongst its 393,000 residents. This may be attributed to the three large universities in the City. Manchester is amongst the most deprived areas in the country with a high percentage of its residents living within highly deprived areas. Indeed, seven of the ten areas in Greater Manchester feature in the top quartile of national statistics of deprivation. Greater Manchester also has a very high victimisation rate, with 29% of households having reported being a victim of crime in both the 2001/02 and 2002/03 BCS. In 2000/01 there were 147 crimes per 1,000 population rising to 153 in 2002/03.

Greater Manchester Fire Brigade (GMFB) was already active in the field of arson prevention prior to the project, with existing car clear schemes, diversion work with young offenders, improvement of security at locations and so on.

### ***The Nature of the Problem***

As a large metropolitan force with all the associated crime problems, Greater Manchester experiences particularly high levels of vehicle fires and dwelling fires. The rates of incidence of such deliberate fires vary across the brigade, and there tend to be identifiable "hot spots". During 2001/ 2002 Greater Manchester Fire Brigade dealt with 7,000 deliberate vehicle fires and 1,300 deliberate dwelling fires. In response to this GMFB made a bid for a 'Fire Investigation and Arson Reduction Team' requesting a sum of £106,000. This would allow the recruitment of a police officer for a two-year period, as well as fire personnel.

### ***The Project***

GMFB were awarded £40,000 for the project in July 2002. As this fell well short of the original bid it was decided to drop the fire investigation element of the project, (although a Fire Investigation Team was established independent of this project), and to recruit a police officer for one year. Other project costs were to be underwritten by the Brigade. The project therefore became the 'Arson Reduction Team'.

In October 2002 a Sub-Officer was seconded to the team to work alongside the ADO in charge of the project. During the police recruitment process the fire officers commenced research into fire service statistics. The intention was that fire service data would be cross-referenced with police and local authority data in order to ensure that resources and strategies were appropriately targeted. The recruitment of a police officer proved a difficult task but a civilian Crime Reduction Advisor (CRA) joined the team in January 2003 for the period of a year.

Aside from statistical analysis, the team also looked at best practice in other areas and into the root causes of arson. Organisations such as insurance companies, local authorities, crime and disorder partnerships, housing officers, auction houses and the media were identified as potential partners in the project.

The initial project plan was that research would be undertaken until April 2003 using crime pattern analysis to identify hot spots. Interventions would then be implemented in the five worst wards for vehicle and dwelling fires. Identified areas would be 'blitzed' for one month and then, on the basis of ongoing statistical analysis, attention would be switched to the five wards that featured at the top at that point. Such 'blitzes' would include a variety of interventions including co-ordination with existing interventions including car-clear schemes, working with schools, businesses and community groups, developing diversion projects and improving the security of locations.

In May 2003 it was decided that the initial ward approach would not lead to significant reductions in rates of arson, due to the large number of wards. It was therefore agreed that the team would concentrate on vehicle and dwelling fires brigade wide. A new phase of research commenced over this period, with local authorities being questioned about their policies in order to establish best practice. Police data on vehicle fires was scrutinised and ways of applying the National Intelligence Model to arson issues was addressed.

Overall, the project in GMP has mainly been based upon data analysis and identifying problems that exist between police and fire brigade data. Much scanning and analysis of problems has been completed through the police officer seconded to the project left in January 2004. The continuation of the work is now dependent upon securing further ODPM funding to develop responses to the problems identified.

### ***Outcomes***

There are no outcomes to report as no significant implementation has occurred.

## **HAMPSHIRE – COLLABORATIVE DATA SHARING PROJECT AND ARSON TASK FORCE**

### ***Background Information***

Hampshire Fire and Rescue Service covers Hampshire County and the Unitary Authorities of Portsmouth and Southampton. In total 1,644,249 people live in the area covered by the fire service (hereafter referred to as Hampshire). Portsmouth and Southampton account for nearly 25% of the total population. Nearly 10% of the population live in areas classed as rural by the Office for National Statistics, with 8.5% of the county's surface being classed as 'Sites of Important Natural Conservation'.

The Isle of Wight, (a Unitary Authority) has an independent Fire and Rescue service, though is covered by Hampshire Constabulary. The island lies just off the south coast of Hampshire, and has a population of 132,731. The population of the Isle of Wight is generally much older than that of Hampshire, and particularly that of Southampton or Portsmouth.

Hampshire (including the three Unitary Authorities) has a relatively low crime rate, with 86 offences per thousand population in 2002/03 (rising from 76 offences per thousand population the previous year). In terms of social deprivation, the district of Hart within Hampshire is the least socially deprived area in England and Wales. Conversely, Southampton falls within the top quartile of most socially deprived districts, as does the Isle of Wight.

### ***The Nature of the Problem***

Arson in Hampshire and on the Isle of Wight increased by 5% between 1999 and 2000, from 1,684 primary non-accidental fires to 1,769 (only 4% or 85 fires occurred on the Isle of Wight). Secondary deliberate fires also increased over the same period.

Vehicle arson was recognised as a particular concern for both the Police and Fire Service, with an increase in primary vehicle arsons of 13% between 1999 and 2000 in Hampshire (the Isle of Wight actually saw a decline, from 14 incidents in 1999 to 8 incidents in 2000).

It was also noticed that Hampshire Constabulary's process for recording and administration of arson incidents was not comparable to the way the Fire and Rescue Service recorded such incidents.

### ***The Project***

A total of £30,000 was awarded to the joint bid from Hampshire Fire and Isle of Wight Fire Service, to fund a project officer, to collaborate to standardise the systems for collection of data and create a joint database for the targeting of resources. In addition, the three partners, the two brigades and Hampshire Constabulary devoted staff hours, and accommodation. A further bid, made in 2002, for funding to retain the co-ordinator was successful and an additional £25,000 was awarded.

The project officer (the Arson Forum Co-ordinator) was appointed in November 2001 and became the executive to an existing Arson Forum between the Police and Fire Brigade, taking forward issues arising at the meetings. The main elements of work have included:

- *Tackling Vehicle Arson:* In March 2002 two hotspot vehicle arson projects were established in Redbridge in Southampton and in Basingstoke, following analysis by the co-ordinator. In December 2003 the scheme was re-launched citywide in Southampton and included vehicle surrender points at local housing offices. To date over 1,070 abandoned vehicles have been removed from these areas. Other districts within Hampshire have begun similar schemes, based on, but not linked to, the work of the project.
- *Tackling Arson in Schools:* There has also been close working with local schools, highlighting the risks of arson and giving advice on how to reduce the likelihood of being a target. This is currently being undertaken with every school in Hampshire and the Isle of Wight where a deliberate primary fire has been set.
- *Development of the Federal Database:* Work on the Hampshire Federal Database, an online data sharing device (administered by the County Council), is being updated and improved with help from the co-ordinator. Some data is available on-line and work to develop protocols for data access is underway.
- *Development of Police Arson Recording Systems:* A pilot scheme where the Police in Southampton will record all fires determined as deliberately started by the fire brigade as arson began in November 2003 in an attempt to align the data.

### ***Outcomes***

Deliberate vehicle fires and school fires, along with all arsons, will be scrutinised to determine if any change has occurred.

## LANCASHIRE ARSON REDUCTION TEAM

### ***Background Information.***

Lancashire has a population of over 1.13 million people. It was formerly one of the largest industrial areas in Britain with key industries including the cotton trade and coal mining. The larger towns in the county include Blackpool, Blackburn and Preston with populations of around 100,000 to 200,000 each. Lancashire's socio-economic composition is somewhat diverse across the region. One-third of the local authority areas feature in the top quartile of national deprivation statistics (namely Burnley, Pendle, Hyndburn and Preston). However, areas such as the Ribble Valley, South Ribble and Fylde enjoy much greater prosperity, suffering no significant deprivation. Victimization rates are above the average for the country with 25% of households reporting victimisation in the 2001/02 BCS and 24% in the 2003/03 BCS. In 2002/03 there were 92 crimes per 1,000 population.

### ***The Nature of the Problem***

In 1999, 44% of 5,708 primary fires attended by the brigade were recorded as deliberate. Nearly half of these were vehicle fires (over 1,200), but a significant number were dwelling fires (543). A total of 91% of secondary fires were also recorded as deliberate. Dwelling fires were also of particular concern for the Brigade, as they were by far the highest in the brigade family group.

### ***The Project***

Following a bid to the Arson Control Forum, £50,000 per annum was awarded to Lancashire Fire Brigade over a period of three years. The project commenced in October 2001. The team initially comprised a Detective Inspector from Lancashire Police Force and a Station Officer from the Fire Service. In March 2002 they were joined by an analyst funded through the Government Office North West. The Team undertook a variety of activity in order to achieve the project aims of arson prevention, fire investigation and intelligence gathering. These are summarised below.

- *Problem Orientated Policing (POP):* The project took a strategic approach to arson reduction by introducing POP across the Brigade in order to reduce deliberate fire setting/ arson and other anti-social behaviour. POP involves detailed scanning and assessment of the particular problem, before an appropriate solution is devised to tackle it. Interventions applied should also be constantly monitored for effectiveness. Following a successful five-month pilot study, POP has now being rolled out across the brigade area and the team have been facilitating this by providing individual areas with the data and analysis required to understand their local problems.
- *Fire Investigation:* Improved investigations were designed to both increase detections and act as a deterrent to potential arsonists. The team provided training to fire and police personnel addressing, inter alia, issues of scene preservation. BY December 2003 37 officers had been trained in fire investigation.
- *Intelligence Gathering and Analysis:* The team identified two major problems: firstly, Home Office rules for counting incidents mean that police and fire data differ significantly; and secondly the passing of information between the fire service and the police is neither timely nor accurate. In August 2002 a new protocol for the passing of information from the fire service to the police was

introduced. Reports were also produced to actively target known offenders. Interventions aimed at collecting more accurate information from other organisations, such as schools were also undertaken. The results of this research were provided to LEAs, the County Council and crime and disorder partnerships in order to promote the use of POP.

- *Awareness raising:* A presentation was given to over 50 individuals in the North West Insurance Group, a media campaign was launched, Air Support was used to fly over school premises identified as at risk, and visits were made to fire scenes.
- *Advice and support:* The Team provided ad hoc advice to other brigade areas and organisations on specific problem areas. These included education authorities and crime and disorder partnerships, as mentioned above, but they have also provided advice on designing out arson to occupiers of high risk premises.
- *The removal of fuel:* A number of interventions were introduced that focused upon the removal of material that could be used for arson. These included:
  - *A skip removal scheme:* Skip Hire Companies agreed to remove hazardous skips that were reported to them within 15 minutes.
  - *“Operation Guy”:* This was launched to address the seasonal problem of the deliberate ignition of bonfires and the illegal sale of fireworks. Bonfires erected before November 1st were removed and, in partnership with Trading Standards, inspections of firework outlets were carried out.
  - *Targeting scrap yards:* Scrap yards were identified as a particular problem as fires at such locations lead to environmental damage and are a huge drain on fire service resources. In conjunction with the Environment Agency advice and follow-up visits were provided at sites that experienced deliberate fires.

### **Outcomes**

The outcomes for this project are measured by using deliberate fire data from across the brigade and data on refuse fires.

## **LEICESTERSHIRE MULTI AGENCY TASK FORCE**

### ***Background Information***

Leicestershire is a county with a population of 609,578 in the East Midlands. The only city in the county is Leicester, though there are a number of satellite towns such as Loughborough, Coalville and Hinckley. Leicester has a population of 289,000, and has a high Asian population who arrived predominantly from India and Uganda in the early 1970's. Leicestershire is a relatively prosperous county, with all of its seven areas within the bottom two quartiles of national social deprivation statistics. Pockets of deprivation do exist in Leicester, which experiences many of the economic, social and crime problems associated with a city. According to British Crime Survey figures, 18% of households were victims of crime in 2000/01 and 19% in 2002/03 (4% below the national average). Recorded crime rate figures were 94 per thousand in 2000/01 population as compared to 104 for England and Wales.

### ***The Nature of the Problem***

The county of Leicestershire has nine areas. Each of these nine areas experience differing types and rates of arson. The original bid made to ODPM highlighted that the brigade attended over 4,000 deliberate fires in 2000 and that over 25% of the deliberate fires were vehicle related. It was also highlighted that around 2,000 deliberate fires were secondary and often associated with refuse. The original bid noted that one of the problems faced in Leicestershire was actually understanding the nature and root cause of the problem. The brigade was aware that vehicle fires were increasing and that there were areas where deliberate fires were most likely to concentrate. For example, deliberate dwelling and vehicle fires tended to concentrate in certain 'known' estates in the city of Leicester. These were also areas where the local crime and disorder partnership would be working in.

### ***The Project***

The project received funding of £38,000 for each of the three project years. The main thrust of the project was to:

- Develop awareness with partners about arson issues. This includes the police, local authority and CDRP's.
- Develop awareness within the brigade about arson problems at a local level.
- Work with the police on improving recording practices as far as arson is concerned. This included improving police recording. Problems experienced here include the lack of police recording of secondary fires. This related to police priorities and the fact that arson is not a priority.
- Development of SAMS (Station Area Management Systems). This strategy was intended to make each local area aware of the problems with arson in the division. There are nine divisional areas in Leicestershire (19 stations) and the intention was to implement a SAMS board in each station area which would be updated every one to two months. Each station would be provided with a map board of incident data for each quarter. Information on fires would be passed both from the centre, though each station would also monitor incidents and add fires to the board. The intention here was to develop strategies to prevent and reduce fires at the local level. The concentration would be on:
  - Dwelling fires
  - Vehicle fires
  - Secondary fires
  - Number of casualties.

A key problem with the SAMS boards was getting them up and running at each station. By December 2003, the boards were up and running in nine stations.

### ***Outcomes***

The outcomes for the project will be measured by considering deliberate fires both before and after the intervention in station areas where the boards were implemented against those where boards were not implemented.

## **LONDON – ARSON TASK FORCE, SCHOOLS ARSON REDUCTION OFFICER, AND VEHICLE ARSON REDUCTION OFFICER**

### ***Background Information***

The region of London is made up of 32 London Boroughs and the Corporation of London (henceforth referred to as 33 boroughs). These 33 Greater London Boroughs cover over 157,800 hectares in the south east of England, and have a resident population of over seven million people, accounting for nearly 14% of the total population of England and Wales.

London has a young population, with a higher than average 20-44 year old population, but a lower than average population over 45 (when compared to the average for England and Wales). This age differential is particularly acute in the boroughs of Inner London, with nearly 50% of the population falling into the 20-44 age group (compared to an average of 35% in England and Wales).

London is the most densely populated region, with 45.6 people per hectare, compared to the average for England and Wales of just 3.4 people per hectare. Kensington and Chelsea, with 131.2 people per hectare, is the most densely populated borough in England and Wales. The City of London is the least populated borough in Inner London (24.9 people per hectare) and, with just 19.7 people per hectare, Bromley is the least densely populated borough in Outer London.

There is a wide disparity of wealth across London with five boroughs in the top ten most deprived boroughs in England (Tower Hamlets, Hackney, Newham, Islington and Southwark) and 14 within the most deprived quartile. In contrast, however, three boroughs fall within the least deprived quartile (Bromley, Kingston upon Thames and Richmond upon Thames).

London experienced nearly 20% of the total number of recorded crimes in England and Wales in 2001/02 and 2002/03, with 152 offences per thousand in 2002/03 and 145 offences per thousand population in 2001/02 (the highest regional rate in England and Wales in both years) with over 20% of households experiencing crime as identified by the BCS. The City of London experienced 10,028 recorded crimes during 2002/03 (a fall from 10,098 recorded crimes during 2001/02), giving it the highest crime rate in England and Wales (1,393 per thousand population), although this is due to the small resident population (approximately 7,000 people) and the huge transient (tourist and commercial) population.

The London Fire Brigade covers all 33 boroughs, working in Borough Teams (Borough Operational Command Units; BOCU's) which are coterminous with the local authority boundaries.

### ***The Nature of the Problem***

Between April 1999 and March 2000, there were 4,952 deliberate property fires across London, with 117 of these being educational buildings. The most affected boroughs were Southwark, Tower Hamlets, Newham and Islington, all suffering from over 250 non-accidental property fires. During the same period, there were 6,726 non-accidental vehicle fires, with Newham, Greenwich and Barking and Dagenham being the most affected, each suffering more than 400 fires. Of these non-accidental vehicle fires nearly 30% occurred to derelict vehicles.

The boroughs of Lambeth and Newham were the main focus of the bid. A total of 3,013 deliberate fires were recorded in these areas between 1999-2000. These fires amounted to 59% of the total number of fires experienced by these boroughs.

There were 750 vehicle fires over the period 1999-2000, over 2,100 non-accidental outdoor fires and six deliberate school fires.

### ***The Project***

Between 2001 and 2003, a total of £80,000 was awarded to London Fire Brigade to fund an Arson Task Force within the existing framework, which included a brigade wide Arson Reduction Team (ART). During the next twelve months, a Vehicle Arson Reduction Officer was appointed, funded through the initial bid. Funding for Schools Arson Reduction Officer was granted in 2002/3, and the Schools Arson Reduction Officer was appointed in August 2002. Both these officers are part of the brigade wide ART. These officers helped to facilitate a variety of activity. This included:

- *Data collection/ Analysis:* The ART primarily collected and collated data from the 33 London boroughs. The results of data analysis and GIS mapping of incidents were created and fed back to the boroughs. The officers of the ART would talk to the borough commanders and suggest areas for interventions and liaise with the Police providing additional information where necessary to aid in investigations. Due to the large area covered by the ART, capacity building, awareness raising and identification of successful interventions from the boroughs main objectives.
- *Reducing vehicle arson:* The Vehicle Arson Reduction Officer initially collected information on the numerous Vehicle Removal schemes in operation at borough level throughout London, with an aim to produce a best practice guide to roll out to all boroughs. An Abandoned Vehicle Notification Instruction (AVNI), which existed in Barnet, was found to be an example of good practice, and was subsequently rolled out to the whole brigade area. This electronic form, found on the intranet, is completed by Watch Officers, giving details of the vehicle and its location, and emailed to the Borough Commander and the Borough Council to aid speedy removal of the vehicle. Mechanisms are in place for the Borough Councils to inform the Fire Brigade that the vehicle has been removed, and to avoid duplication in reports.
- *Arson against schools:* The Schools Arson Reduction Officer produced a document examining schools arson across London, suggesting recommendations to improve the response to and prevention of arson in schools.
- *Police recording of deliberate fires:* The ART is monitoring a pilot scheme of an electronic form (FIT1) used by the Fire Brigade to notify the police of a deliberate fire (the electronic form is a replacement of the existing paper based system and is being piloted in Tower Hamlets and Southwark).
- *Awareness raising of arson issues:* Awareness raising through seminars has occurred, one directly targeting businesses in London, and one, which was cancelled due to strike action, aimed to target schools and associated stakeholders.



## ***Outcomes***

Deliberate vehicle fires and deliberate school fires across London will be scrutinised as will total deliberate fires.

## **MERSEYSIDE FREE TEAM**

### ***Background information***

Merseyside is a large metropolitan area with a population of 1.36 million people. Half are resident within the city of Liverpool and the Wirral. Merseyside has a young population boosted by the cities universities. In terms of social deprivation, the area is one of the most deprived areas in the country. Knowsley and Liverpool feature as the second and third most deprived areas in England, but all five areas of Merseyside are within the top quartile. Despite this, crime rates are not as high as in some other metropolitan areas, with 108 in 1000 residents being victimised in 2000/2001 and 120 in 2002/2003 (in London it was 152 per thousand). A total of 22% of households experienced crime in 2001/02 compared to 15% in 2002/03. However, much of the crime in Merseyside is disproportionately concentrated in Liverpool.

The numbers of young people and levels of social deprivation dictated a need for interventions aimed at reducing anti-social behaviour and fire-setting amongst youth. There were a number of such schemes in operation prior to the present project. However, these schemes were run by a variety of providers and there was no central co-ordination of interventions, making it difficult for referrers to identify the most appropriate scheme. In view of this the co-ordinator of the present scheme undertook six months research (reporting in February 2002), outlining recommendations for better co-ordination and the provision of further schemes to intervene with young people involved in, or considered at risk of becoming involved in, fire-setting.

### ***The Nature of the Problem***

It was felt that that was a problem with fire-setting amongst young people on Merseyside. Thematic and geographical research showed that young arson offenders come from socially deprived, marginalized areas, and were at greater risk of social (particularly school) exclusion. Furthermore, such young people often do not fully appreciate the impact of their actions and thus, educational interventions can have a positive impact on behaviour and reduce arson in the long term.

### ***The Project***

One of the main provisions of the aforementioned research was that services should be co-ordinated and run through one central body who should receive all referrals from relevant agencies, thereby ensuring that the most appropriate intervention is applied to the individual concerned. This recommendation was implemented through the establishment of the FREE (Fire Reduction through Engagement and Education) Team in 2002. The Team comprised five staff members, who worked to a strategy developed with partner agencies. The main aims of the Team were to:

- Educate socially excluded people in the importance of fire safety.
- Help arson offenders understand the true consequences of their actions and prevent re-offending.

- Provide positive role models and activities to help young people develop confidence and self-esteem and raise their aspirations.

Under the FREE Team, a number of existing schemes continued to be provided, alongside new interventions developed by the Team. These are outlined below:

- *Face-Up*: Aimed at convicted offenders between 10 and 25 years who attended the project as part of a Supervision Order. Under restorative justice principles, the offender is confronted about their crime and behaviour, and helped to understand the effect of their crime on others over an intensive one-week course.
- *Face-Up 2*: Based on the same principle, but aimed at minor offences and therefore tailored to the requirements of the individual.
- *The Beacon Project*: Run in partnership with the LEA, intervenes with those identified as being at risk of becoming involved in arson or being excluded from education and provides a practical, out of school experience, based on fire safety. This is aimed at increasing self-confidence and self-esteem.
- *The Youth Offending Team Preventative Programme*: Run with Sefton YOT and aimed at children at risk of being taken into care. It comprises a seven-week course addressing fire safety issues.

By December 2003, over 130 youngsters had been on short-term activity programmes, over 100 youngsters at risk of becoming arsonists had been on programmes and over 20 convicted arsonists had attended programmes. Youth organisations worked in partnership with the Team and were able help by making referrals (for example Youth Offending Teams, Youth Inclusion Programme Staff and The Princes Trust all worked closely with the project). Other partners included LEAs and Crime and Disorder Partnerships.

### **Outcomes**

In terms of a reduction in arson and deliberate fire-setting, the success of the intervention could only validly be measured by developing a longitudinal study, and this is clearly beyond the scope of this study. However, short term feedback from those that have participated in the project has been positive, referrals outstripped the ability of the Team to deliver the interventions (indicating a local faith in the service provision), and the scheme received national recognition for its work with young people.

## **NORTH WALES – WREXHAM VEHICLE ARSON REDUCTION INITIATIVE (VARI)**

### **Background Information**

The Local Authority of Wrexham is in North Wales and is covered by North Wales Fire Brigade and North Wales Police. It covers an area of 504,000 hectares and has a resident population of 128,476. It has a population density of 2.6 people per hectare, which is above the Welsh average of 1.4 people per hectare.

Wrexham has a medium social deprivation level, ranked 12 out of the 22 local authorities in Wales, and its electoral divisions range from some of the most deprived in Wales to some of the least (eight of the 34 electoral divisions are within the top quartile (most deprived) whilst six are in the bottom quartile).

There were a total of 65,133 recorded crimes in North Wales in 2002/03 and a crime rate of 98 offences per thousand population, a rise of 20% from the 54,116 recorded crimes during 2001/02, and a crime rate of 82. The BCS indicated that just 17% of households had suffered a crime, one of the lowest in England and Wales.

### ***The Nature of the Problem***

Across Wales the level of deliberate fires was increasing year-on-year with 1999/00 figures indicating that North Wales Fire Brigade attended 503 vehicle fires. North Wales Fire Brigade accounted for 10% of the total number of deliberate vehicle fires attended in Wales. In Wrexham alone the number of deliberate vehicle fires was 191 in 1999/00 (an increase of just over 70% on the previous year) accounting for 38% of the total number in North Wales.

Analysis had shown that the percentage of burnt out vehicles in Wrexham that had previously been stolen was also increasing with 11% of the total of deliberately torched vehicles having been reported as stolen in 1997/98, rising to 24% in 1999/00.

### ***The Project***

A combined bid from the three Welsh Fire Brigades was submitted to the Arson Control Forum to secure funding to tackle the growing vehicle arson problem. The brigades received a total of £108,000 in mid 2001. The funding was divided between the three brigades with £30,000 being made available to each brigade for project work. In 2002/03 a further £50,000 was awarded to Wales, with Wrexham securing £8,000, permitting the continuation of the Wrexham scheme and extension to Rhyl in Denbighshire.

It was proposed to tackle vehicle arson within Wrexham, using the good practice emerging from the VARI in Merthyr Tydfil and Swansea. The Police, already tackling vehicle crime through Operation Steer, were keen to work closely with the fire brigade in implementing interventions to reduce vehicle crime and arson. Focusing on removal of fuel and securing of popular dump/burn sites, the VARI approached the local borough council and provided the environmental officer with a digital camera to speed-up and reduce costs associated with authorisation for vehicle removal. Over a seven month period (September 2001 – March 2002) the VARI provided funding for vehicle removals, with 273 vehicle removed using the funding available. Three popular dump/burn sites in Wrexham were secured to prevent dumping and burning of vehicles.

A poster campaign to raise awareness was conducted, and vehicle information packs were produced. In addition to this, a large proportion of the funding was ring-fenced for a Youth Intervention project to be run by the YOT (covering both Wrexham and Flintshire). However, by December 2003 this had not been forwarded as there were problems finding sufficient offenders within a suitable radius.

Following the second round of funding and a seminar held by Wrexham VARI (and including Merthyr Tydfil and Swansea VARI's) to promote the scheme in other areas of North Wales, a vehicle arson reduction scheme was established in Rhyl, Denbighshire. A total of £4,000 was diverted to this scheme allowing the town to fund the removal of vehicles.

### ***Outcomes***

Deliberate vehicle fires in Wrexham (Stations E04, E07 and E11) will be examined.

## **NORTH YORKSHIRE COMMUNITY RISK MANAGEMENT TEAM**

### ***Background Information***

North Yorkshire is a large rural area and has a population of just under half a million people. Harrogate is the largest town with a population of 150,000 and the second largest, Scarborough, has over 106,000.

The area has a healthy economy with low unemployment and accordingly suffers very little deprivation and low crime rates. The victimisation rates are well below the national average with 15% of households being victims of crime in 2000/01 and 21% in 2001/02. The only area suffering a level of deprivation is Scarborough. Agriculture, mineral extraction and power generation are the areas most important industries, alongside tourism, with areas such as Scarborough attracting over 4 million visitors a year.

### ***The Nature of the Problem***

There are a few identifiable hot-spots of deliberate fire setting in North Yorkshire. York is the most densely populated town and has a higher incidence of arson than elsewhere with 50% of the Brigade's incidents, but other identified areas tend to be those that border more densely populated counties, such as Selby, bordering West Yorkshire.

### ***The Project***

A bid for a Community Risk Management Team resulted in an award of £30,000 per annum over 3 years. This allowed for the appointment of a project co-ordinator and the project commenced in September 2001. A second fire officer was seconded to assist with the intervention but this post was underwritten by the Fire Service. Following a high profile launch in December 2001 an independent executive was established in order to direct the activities of the scheme. The executive included members from organisations such as the fire and police services, YOTs, the Safer York Partnership and Crime and Disorder partnerships.

The original project aims were to reduce arson through the already established risk management model that underpinned the brigade's community safety strategies. The project would also capitalise on already existing interventions. The overriding aim was to 'remove', 'reduce' and 'intervene' with risks.

In order to identify problems and inform effective interventions a data exchange protocol was implemented in conjunction with the police, and the information utilised by an analyst for crime mapping. In particular, a study of the areas from which vehicles were stolen was undertaken in York with the use of GIS crime mapping. Data is also provided to local watches in regard to their problem areas.

Partnership working was also an instrumental part of the project. Work with North Yorkshire police was important for the sharing of data, but also for the purposes of a co-ordinated fire investigation approach. The project had some input into improving co-ordination between scenes of crime and fire investigators. The team has also worked closely with waste management managers to develop a protocol for the removal of abandoned cars, and developed good relationships with councils, YOTs and crime and disorder partnerships.

Advice was given to relevant organisations on issues such as the removal of rubbish, abandoned vehicles and the securing of derelict buildings. Advice was also provided to schools, businesses, councils, community groups and leaflet campaigns were

conducted in relation to business fires and agricultural fires in conjunction with the NFU.

One of the main focuses of the scheme was to reduce the proclivity to offend amongst young people. Youth interventions included:

- The extension of the Young Fire Setters Team aimed at reducing offending amongst 3 to 11 year olds. This intervention had been in operation for four years, but under the present initiative 24 volunteers were trained to deliver one to one interventions with young people following incidents in which child involvement is suspected. Based on referrals from YOTs and schools amongst others, this was intended to be a rapid intervention scheme with volunteers attending within 24 hours. Delivery materials for the intervention were secured through contributions from organisations such as the Early Learning Centre and to date. By December 2003, nearly 100 referrals had been made.
- Providing information to the YOTs for dealing with those convicted of arson.
- Providing advice to over 100 primary schools on the risks of arson and fire setting.
- Making presentations to over 3000 secondary school pupils on issues such as hoax calls to the brigade.
- Providing input into schools in conjunction with the police and prison services.

A number of problems were reported by the project team. Due to the fact that funding was only received for the co-ordinator's post, the team had to seek funding for specific project interventions from other sources. However, sponsorship has proved difficult to secure as potential sponsors did not feel they are getting anything useful in return. Furthermore, the timing of the commencement of the project meant that most CDRPs had written their strategies by the time they were approached, meaning that they were slow to come on board with the fire reduction message. The geography of the county also proved problematic in terms of getting partners together.

### ***Outcomes***

Though most of the project activity is based upon giving advice to schools and young people (which is hard to measure empirically), the overall number of deliberate fires across the brigade and in target areas such as York will be compared to the pre-project period.

## **SHROPSHIRE EXTINGUISHING ARSON PROJECT.**

### ***Background information***

Shropshire Fire Service, along with Hereford and Worcester Fire Brigade, cover the West Mercia area. Shropshire is a predominately rural area with a total population of just over 283,000 people. The demographics of the area show a that the area has a larger proportion of elderly people than the national picture. Shrewsbury and Atcham is the area with the largest population (95,850). Shropshire is a relatively prosperous area, with most areas falling within the middle quartiles in terms of deprivation. There are no significant pockets of deprivation. The crime rate is relatively low with 89 crimes per thousand population in 2001/02 and 91 in 2001/02. In 2001/02, 20% of households were victims of crime compared to 17% in 2002/03.

In response to the specific issue of arson, Shropshire Fire Brigade already had a Partnership Agreement between the emergency services. There were also a number of fire safety activities already in operation across the region, upon which the EAP sought to build and co-ordinate without interference. The ACF funding allowed the establishment of the 'West Mercia Local Arson Task Force', dedicated to the reduction and prevention of arson.

### ***The Nature of the Problem***

Whilst Hereford and Worcester tend to have more fires per annum (approximately 2000), Shropshire suffers a larger proportion of deliberate primary fires (over 50%). Moreover, the most problematic areas for deliberate fires are concentrated in the larger towns, namely, Telford Central and Wellington.

### ***The Project***

Funding for the post of the Project Manager and related overheads (£50,000 per annum for 3 years), was received in March 2001. There were various delays in implementation, but the project formally commenced in September 2001 with analysis of the arson problem across the area and developing interventions on a number of fronts. In February 2002 the results of this research were reported ("Overview of the Analysis Stage"). The report was based on statistical analysis of three years data in relation to the volume and nature of incidents attended and was conducted thematically.

The implementation of the EAP has sought to tackle arson on a variety of fronts in line with the themes identified through analysis, and to reflect this a number of task groups were established to steer individual areas. These are outlined below.

- *Schools:* Year one involved the preparation and delivery of two large seminars entitled 'Reducing the Risk of Arson in Your School' to school headmasters, governors, LEAS and other related parties. These were delivered to over 200 people. This has resulted in a reduction in serious school fires from the previous annual average of 14, to four in the following year, and one in the last year. The reporting of school fires was also encouraged. The 'Backfire' education programme was delivered to identified high risk schools and guidance on referral to Juvenile Fire-setters was provided. In June 2003 a Schools Risk Assessment Officer was appointed to undertake risk audits in Telford and Wrekin.
- *Farms:* An agreement not to site farm buildings near roads was been reached with the Local Authority Planning Department. A project in conjunction with the NFU was also launched at the end of August 2003, which aimed to improve information sharing and reduce arson.
- *Businesses:* 14 seminars were delivered to representatives from 1,000 businesses on fire safety issues. Awareness was also raised through the local media and 'Quick Strike' leaflets.
- *Vehicles:* A poster campaign encouraging the reporting of abandoned vehicles was introduced and funding for vehicle amnesties sought. Best practice events were conducted with local authorities and procedures for the recording of stolen/ burnt out vehicles were agreed. In April/ May 2001 an intelligence operation with the police, 'Operation Cubit', led to the removal of 210 vehicles.

- *Malicious calls:* A pilot strategy to reduce malicious calls was launched which included training for Fire Control Room staff to enable them to identify hoax calls. Awareness campaigns and work with mobile phone providers proved effective, leading to a 40% decrease in attendance to hoax calls in the past year.

Other areas of activity included:

- *Derelict buildings:* Advice has been provided to councils regarding this problem.
- *Youth work:* Arson awareness work with the “Crucial Crew” and guidance on fire setters was provided. The brigade also ran a Juvenile and Junior Fire Intervention Scheme and YOTS can now use fire brigade intervention as part of a court order.
- *Public awareness:* Targeted campaigns utilising radio, press, leaflets, posters (including on the sides of buses) etc. addressed issues such as skip fires, domestic fires, abandoned vehicles and the profile of Crime Stoppers at fire scenes. The “Fire Kills” message was also widely used on vehicles.
- *Closer working relationships with the police and other organisations:* The Fire Brigade are now represented on six local crime and disorder partnerships and work with LEAs, chambers of commerce, YOTs, probation, social services, neighbourhood watch, housing associations, CCTV operators and so on. Newsletters are also produced on a quarterly basis to be provided to 320 organisations. Police safety information is delivered with fire safety information and Crime Stoppers has been introduced at fire scenes. Closer working relationships with scenes of crime have also been developed.
- *Fire Investigation:* Investigation procedures were also addressed through the provision of aide memoire cards for fire and police personnel at fire scenes. Basic training was also provided to operational personnel.
- *Data collection:* An investigation into the consistency and accuracy of the systems for recording incidents of arson was also undertaken and a new brigade order on the recording of FDR1s has been produced.

There were also a number of isolated projects that were developed in response to specific problems in specific areas.

### **Outcomes**

Outcomes from specific projects have been measured such as school fires and attendance at hoax calls. However, due to the broad range of interventions under this project, outcomes are measurable on a number of fronts.

## **SOUTH WALES - MERTHYR TYDFIL VEHICLE ARSON REDUCTION INITIATIVE (VARI)**

### **Background Information**

The Local Authority, Merthyr Tydfil is covered by South Wales Fire Brigade and South Wales Police. It covers over 111,000 hectares of Wales, with 24,000 hectares of National Park Area. A population of 55,981 people reside within the Local Authority. With just over 5 people per hectare, it is one of the top ten most densely populated areas in Wales.

Merthyr Tydfil is the most socially deprived Local Authority in Wales, with nine of its eleven electoral divisions within the top quartile of the most socially deprived in Wales. The electoral division of Gurnos is the most deprived, (ranked 4th out of 865 in Wales).

Merthyr falls into South Wales Police Force area which accounted for nearly 50% of the total recorded crime in Wales during 2001/02 and 2002/03. There were 143,372 recorded crimes in 2002/03 (a rise from 116,708 in 2001/02). It had the highest crime rate in Wales, with 120 recorded crimes per thousand population in 2002/03 (90 in 2001/03), and the BCS (2002/03) indicating that 18% of households had suffered one or more crimes during the year.

### ***The Nature of the Problem***

Across Wales the level of deliberate fires was increasing year-on-year with 1999/00 figures indicating that South Wales Fire Brigade attended 2,822 vehicle fires. South Wales Fire Brigade accounted for 57% of the total number of deliberate vehicle fires attended in Wales. In Merthyr Tydfil the number of deliberate vehicle fires was 199 in 1999/00 (an increase of just over 20% on the previous year) accounting for 7% of the total number in South Wales.

Analysis had shown that the percentage of burnt out vehicles in Merthyr Tydfil that had previously been stolen was also increasing with 15% of the total of deliberately torched vehicles having been reported as stolen in 1997/98, rising to 25% in 1999/00.

### ***The Project***

A combined bid from the three Welsh Fire Brigades was submitted to the Arson Control Forum, to secure funding to tackle the growing vehicle arson problem. The brigades received a total of £108,000 in mid 2001. The funding was divided between the three brigades with £30,000 being made available to each brigade for project work. In 2002/03 a further £50,000 was awarded to Wales, with Merthyr Tydfil securing £9,000.

The Safer Merthyr Tydfil Partnership (SMT) existed before the funding was provided and a sub-group was already focusing on auto-crime including vehicle arson. The auto-crime subgroup was headed by a permanent attachment from the Police Force. The Station Commander from Merthyr Tydfil Station was the representative for the fire brigade in the sub-group. The main focus of the project was on the following:

- *Awareness raising of the problem of vehicle arson:* Focus was given to awareness raising, fuel (abandoned, end-of-life and burnt vehicle) removal and securing of popular dump/burn sites. A Vulnerable Vehicle scheme was introduced and letters were sent to owners of vehicles noted by various representatives to be at risk. The process involved checking vehicles using the Police National Computer (PNC) and proved too resource intensive. The scheme was superseded by the Vulnerable Windscreen Scheme, whereby 'tickets' were left on the windscreens of vehicle noted to be at risk as valuables were on display. Targeted information distribution also occurred, where owners of Ford Escorts over 5 years old (the vehicles most likely to be stolen in the local area) were sent crime prevention information after being identified through the Vehicle Online Descriptive Search (VODs).
- *Targeting high risk areas:* Various leaflet drops in areas of high vehicle arson were also conducted, and the local media were used to promote the abandoned vehicle and 'End-of-Life' removal schemes run by the Local Authority. Adverts were also produced for display in 20 local buses in the Merthyr Tydfil area,



giving details of the removal schemes and advertising the CrimeStoppers number.

- *Securing car parks and dumping sites:* Two local car parks achieved 'Secured' status due to partnership working and environmental changes, and popular dumping sites were cleared of burnt out and abandoned vehicles and secured using boulders. Aluminium signs were purchased (30 in total) which can be put up in hotspot areas to warn residents of the dangers of vehicle crime and arson.
- *Other activity:* Through the partnership various other interventions were undertaken. This included training Community Safety Wardens in Fire Site Management, producing a video highlighting fire safety which will be made available to all comprehensive schools in the area, provision of auto-locks and garage locks to the public at reduced rates, involvement with a local Crucial Crew Scheme (which includes a fire safety element) and provision of smoke alarms to vulnerable people.

### **Outcomes**

Vehicle arson in the Merthyr Tydfil area will be scrutinised.

# ANNEX B

## Case Study Descriptions

### Case Study 1: The Avon Car Clear Project

#### INTRODUCTION TO THE PROJECT

This case study outlines the Avon Car Clear project. This project began in the South Bristol area in April 2001 and was extended to the whole of Avon in April, 2002. The county of Avon is made up of four unitary authorities namely, South Gloucestershire, North Somerset, Bath and North East Somerset and the City of Bristol. Avon has a population of nearly one million people, with 39% of these living within the City of Bristol. With the exception of Bristol, the county is predominantly rural and there is little social deprivation. Over 50% of wards in the other three unitary authorities fall in the bottom quartile of socially deprived wards in England, and the districts of Bath and North East Somerset and South Gloucestershire fall in the bottom quartile of socially deprived districts.

Bristol is the regional capital of the West of England. This is a medium sized city with a population of nearly 400,000. The Port of Bristol is the UK's largest car port handling facility and provides extensive import and export facilities. The initial project was based in the south of the city in the South Bristol policing area, which has a resident population of around 140,000.

Avon and Somerset Police Force cover not only the four unitary authorities (formerly Avon), but also Somerset. Avon and Somerset saw a 20% increase in crime between 2000/01 and 2001/02 but a decrease of 3% between 2001/02 and 2002/03 (Avon and Somerset were one of the police forces to implement the National Crime Recording Standard in advance of the national implementation). The crime rate is above the national average, with recorded crimes standing at 117 offences per thousand population in 2002/03, and the BCS reporting that over 20% of households were affected by crime over the same period.

The ODPM funded project had its roots in an established vehicle removal scheme implemented by the Police in 1999. The project was deemed a success and the Avon Car Clear Partnership went from strength to strength. The project is now fully funded by the Local Authorities, although administration remains the responsibility of the fire brigade. The Car Clear Partnership has now evolved and grown into an Arson Task Force, taking forward the lessons learned through Car Clear, and continuing to work in partnership with the various agencies, to develop arson reduction interventions to be applied throughout Avon and Somerset.

## PROJECT BACKGROUND

The project was implemented after initial scanning and analysis of data indicated that vehicle arson was becoming a particular problem across the Avon area. This analysis showed that:

- Vehicle arson in Avon accounted for over 50% of Avon Fire brigade's calls, and totalled 2,100 fires in the year ending March 2001.
- The majority of these arsons occurred within the City of Bristol (1,450). It was estimated that 66% of these burnt vehicles had been stolen.
- There were 12,181 vehicles stolen in the Avon and Somerset police force area in 2001/02 with over 7,000 of these being stolen from the City of Bristol.
- A total of eleven hotspot areas were identified in Avon. Each Unitary Authority area had at least one hotspot area, although the majority fell within the City of Bristol.
- In the nine months leading up to the beginning of the South Bristol based project (April 2000 to December 2000) there were 539 vehicle arsons in South Bristol, compared with 208 in Central and East Bristol and 367 in North Bristol. It was reported that the increase in abandoned vehicles, especially those burnt out or vandalised was increasing dramatically, becoming very acute in some areas.

The original pilot project covered the South Bristol area and showed encouraging results. Data were compared for the nine-month period before the pilot scheme (May 2000-January 2001) and the nine months of the trial period. This showed that in the target area of South Bristol, vehicle arson fell by 3.5%, though in comparison areas of North Bristol and Central/ East Bristol vehicle arson grew by 21% and 18% respectively.

As a result of this activity, a bid was made to the Arson Control Forum, New Projects Initiative (in early 2001). A total of £40,000 was received in August 2001 and £73,000 in May 2002. This enabled the Bristol Car Clear Partnership to expand. Although funding was received whilst the south Bristol project was running, it was always the intention to use the addition monies to expand the project to the whole of Avon. This expansion began in November 2001.

## PROJECT STRUCTURE AND ACTIVITY

As a result of ODPM funding, the Bristol Car Clear Partnership, was extended to include partners from the other Unitary Authorities, South Gloucestershire, North Somerset and Bath and North East Somerset (BANES) in late 2001. The Police and Fire Brigade negotiated to provide two full time officers to the Avon Car Clear Partnership. These officers were funded by their respective agencies. In addition, the fire brigade provided accommodation and equipment for the two officers. Both the Fire Brigade and the Police provided £10,000 towards the removal of vehicles under the non-Bristol City Council (BCC) schemes and the BCC paid for two schemes completely ('101' and 'Hot-spot') and subsidised the 'Owners Request' Scheme.

The two officers, were housed at Avon Fire Brigade Headquarters in Bristol, and were line managed by the Community Fire Safety Manager (the Police Inspector has also linked into the Community Safety Unit of Avon and Somerset Police). The project was overseen by the Arson Task Force Project Group, which included representatives from

all the partner agencies (the structure of the project and its associated activity is detailed in Figure B1.1)

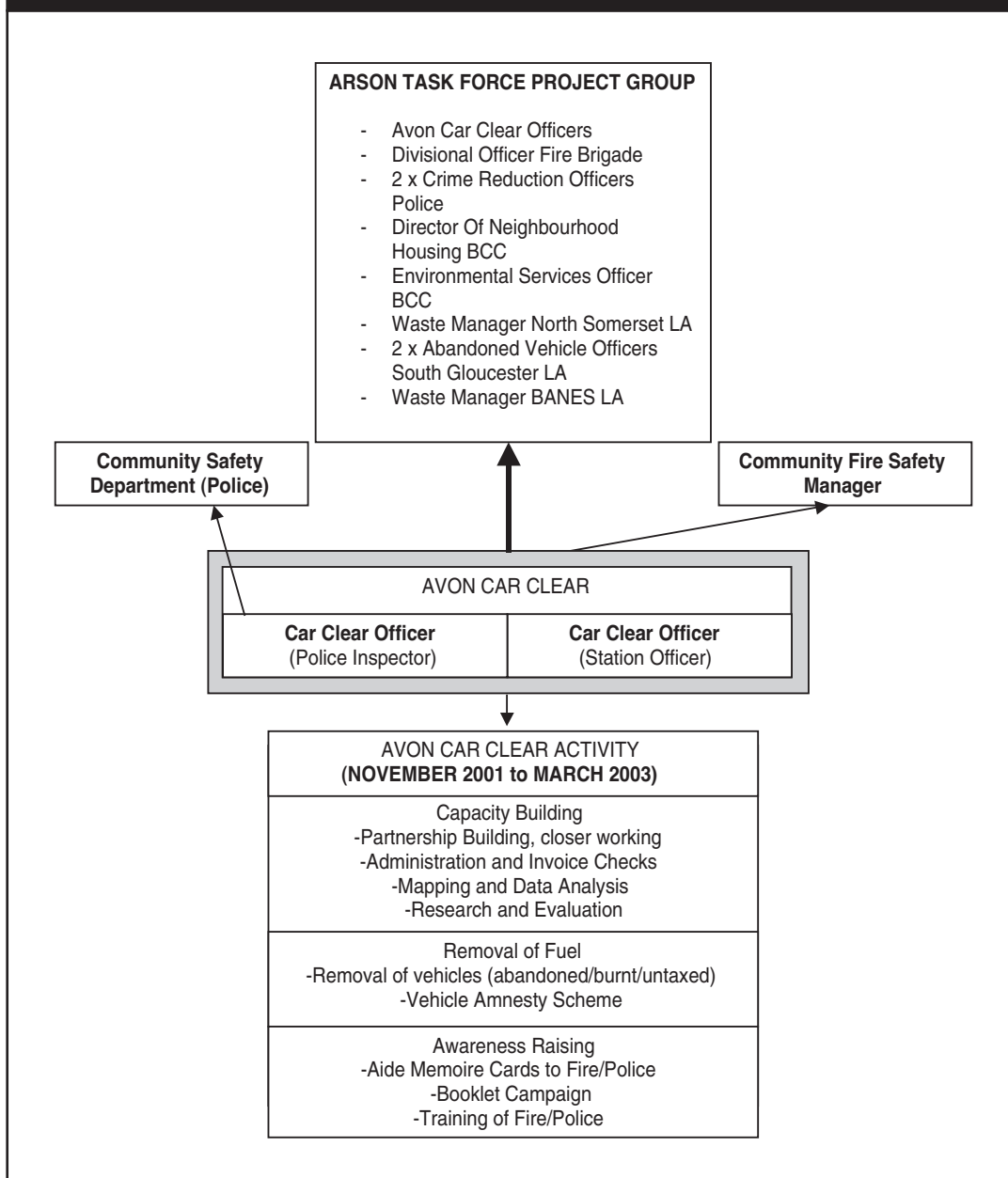
The South Bristol Pilot Scheme provided a sound basis for the expansion of the project across the Avon area. The two officers seconded to the project were primarily responsible for overseeing its expansion and they worked in partnership with the four unitary authorities in Avon to develop the Avon Car Clear Partnership. This formally came into existence in November 2001 and has overseen a variety of activity. The project rolled out the various vehicle removal schemes piloted in the South Bristol area and supplemented these existing schemes with others. The key activities undertaken by the project are detailed below.

### ***Capacity Building***

The development of such a project involves developing a number of areas to ensure the project is implemented successfully and that key information about the number and placement of incidents, and the number of vehicles removed is correct. In the Avon project this primarily involved:

- **Developing relationships with partner agencies:** The project was based upon a partnership approach to reducing vehicle arson and thus a significant proportion of time was spent liaising with partners in securing support, understanding and funding for interventions. To this end, the Avon Car Clear Partnership met once a month between November 2001 and July 2002 (this becoming bi-monthly between August 2002 and April 2003, and has been superseded by the Arson Task Force planning meetings since April 2003 to present).
- **Conducting GIS analysis:** The project was reliant upon identifying where arson incidents were most likely to occur and officers spent time conducting analysis of incident data. The identification of areas where vehicle arson was most prevalent was possible through conducting GIS (geographical information system) analysis to aid the targeting of vehicle removal schemes (specifically the 'Hotspot' schemes).
- **Developing a car removal database:** Dealing with invoices submitted by the contractors for vehicle removals proved to be time consuming, particularly where records held by the Car Clear Partnership do not tally with the invoices submitted. This led to the establishment of an integrated database in August 2002, containing information from all of the vehicle removal schemes, and was used to check invoices and provide management reports.
- **Public Survey:** The partnership commissioned a public survey, (1,500 questionnaires) to ascertain public views on abandoned and burnt out vehicles and whether the public had noticed a change in the response to such problems since the inception of the project. The questionnaire production was funded through the Greater Bristol Foundation, and produced by the Police Research Department. Although a low number of returns were received (approx. 80) these were analysed by an independent research consultancy. Unfortunately the small number returned indicated a lack of knowledge regarding the Car Crime Partnership, however nearly 40% of those surveyed believed that there had been a reduction in the number of abandoned vehicles.

Figure B1.1: Avon Car Clear Partnership: Project Structure and Activity



### ***Removal of Fuel***

The focus of the Car Clear Partnership was the removal of abandoned, burnt out, untaxed and unwanted vehicles. To this end, the schemes piloted in the South Bristol Area between April 1999 and October 2001<sup>24</sup>, were extended to cover the whole Avon area in January and February 2002. A number of schemes were introduced focusing upon:

1. The removal of vehicles from residential areas.
2. The removal of unwanted vehicles from owners.
3. The removal of vehicles from commercial premises.
4. Reducing the likelihood of cheap/unroadworthy vehicles being resold.

<sup>24</sup> These South Bristol Schemes continued to run whilst the Avon Car Clear was established.

These schemes are outlined below.

## 1. REMOVAL OF VEHICLES FROM RESIDENTIAL AREAS.

- *Vandalised Vehicle Hotlines* – Here callers were able to report the location of vandalised vehicles. A South Bristol Hotline, was extended to Central and North Bristol (although the same number is used, the calls were split using an automated link to the relevant Police Districts). Each district had to 'man' the line and take details from the lines to pass onto officers to investigate. In BANES, a 'virtual number' was utilised, which meant the public would call a Bath telephone number but were automatically directed to the Police Headquarters at Portishead. The lines in South Gloucestershire and North Somerset were both the Senior Traffic Wardens lines, these officers were responsible for dealing with reports. These lines were all live from January 2002.
- *'101' Scheme* – funded by the Local Authorities this scheme permitted the removal of vehicles within 24 hours, negating the need for a 7 day notice in situ, due to this notice being given once the vehicle is in the car pound. The Scheme covered abandoned and burnt out vehicles. If the vehicle had no value or was untaxed, it could be crushed immediately.
- *'Hotspot' Scheme* – this scheme (funded by each of the individual unitary authorities) was expanded to cover the whole of Avon in January 2002, with each authority area having at least one hotspot area (although the majority fell within BCC area). The Police would identify the vehicles, and if they believed they were at a significant risk of arson would then authorise the local authority to remove them immediately (within 30 minutes). Like the 101 Scheme, the vehicles were often abandoned or burnt out and were crushed if had no value or were untaxed.
- *'Police/Fire' Scheme* – if a vehicle was identified outside of the hotspot areas, but the officer felt that it posed a significant risk of being vandalised or burnt, then it could be removed under this scheme within 30 minutes. The funding made available by the ACF NPI was used to fund this scheme, in addition to the £20,000 made available by the Police and Fire Brigades at the inception of the Avon wide Car Clear Scheme.
- *'Community Vehicle' Scheme* – any vehicle identified to have no owner (or where the owner denies ownership) that had a PNC 'involved in crime' marker and was not displaying a valid vehicle excise disc, could be removed under the authorisation of the police within 30 minutes. This included vehicles that were in use when discovered.

## 2. REMOVAL OF UNWANTED VEHICLES FROM OWNERS

- *'Owners Request' Scheme* – the removal of vehicles on the request of members of the public for a fee of £15 was extended throughout Avon in January 2001, and was subsidised by the Local Authorities.

### 3. REMOVAL OF VEHICLES FROM COMMERCIAL PREMISES

- *The 'Commercial Traders' Scheme* – in September 2002, the Avon Car Clear Partnership were approached by a fast food restaurant, who were having problems with vehicles being abandoned and burnt out on its car park. An agreement was established whereby the restaurant would notify the Car Clear officers of vehicles; these would then be removed by BCC within 48 hours for a fee of £60 per vehicle. The vehicles would be checked and if no owner could be found, crushed. After the inception of the scheme, several other local businesses joined. This scheme eventually netted a small profit for the Car Clear Partnership.

### 4. REDUCING THE LIKELIHOOD OF CHEAP/UNROADWORTHY VEHICLES BEING RESOLD

- *'Auction House' Scheme* – conceived and developed in the summer of 2002 by the Avon Car Clear Partnership, this scheme established an agreement between a local vehicle auction house and one of their suppliers. The car supplier had agreed that any vehicles it supplied to the auction house that did not meet a self imposed reserve of £50 would not be sold, and the auction house agreed to pay the local council to remove the vehicles from its premises (approximately £90 for 3 vehicles). This meant this scheme was relatively self-sustaining. This project aimed to reduce the number of un-roadworthy, low value vehicles in Bristol (and the surrounding area), and it was believed that this project would have a knock-on effect to the crimes in the areas involving these types of vehicles.
- *'Motor Traders' Scheme* – a further attempt to reduce the number of un-roadworthy, low value vehicles, this scheme established a protocol with four main car dealers in Bristol. In September 2002, these dealers agreed to give vehicles of a value of less than £100 to BCC for destruction, the BCC agreed to fund this scheme.

Following the establishment of an Arson Task Force in late 2003 it is intended to extend all these schemes to cover Somerset. Four of the five district councils in Somerset have already agreed to fund the removal schemes.

#### ***Awareness Raising***

In addition to the interventions implemented, the project also promoted the problem of vehicle arson in several ways. These included raising the awareness of fellow officers, publicising the project through the local media and the development of a project booklet. These are outline below:

- **Raising Awareness of officers:** Once it was decided that the vehicle removal schemes, would be extended to the whole of the Avon area, training for the police officers across the area was conducted. It is estimated that the Car Clear Officers ran training days for approximately 1,300 officers. These days outlined the various schemes that were in existence and when they could be used. In addition, an Aide Memoire Card was developed to remind officers of the available schemes. This card was printed and laminated by the Police. These cards were distributed to all officers in the Avon area (approximately 1,300).
- **Utilising the local Media:** Staff employed on the Car Clear Scheme developed several documents outlining the project since its inception. A Problem Orientated Policing Document won a national POP award (the Tilley Award),

and a business case to raise the profile of the schemes to the Local Authorities, to persuade them to integrate them into their normal working practices was produced. The project also received publicity through local media (papers, radio and television), which raised the project profile. In January 2002 a 'Launch Day' was held with all the partners involved and press and public invited, to formally launch the schemes across Avon. Various presentations were also given to community groups, internal partners and interested parties.

- **Project Booklets:** The booklet, initially produced to promote the vehicle removal schemes in South Bristol, included information from all partners (all four Local Authorities). A total of over 47,000 were printed by the Police and distributed throughout Avon. In addition to this, a number of Tri-Signs were purchased and erected in Hotspot areas to warn local residents of the dangers of vehicle arson.

It had also initially been planned to provide the local schools with posters and to provide an education programme for youngsters through the local schools. However, due to the amount of time involved in running the vehicle removal schemes this was scrapped.

## PROBLEMS ENCOUNTERED

The project made considerable strides at tackling a number of aspects of vehicle arson. However, as with most projects involving a number of agencies there were some teething problems with implementation. These included:

- **Poor Quality/Different Data:** Problems in establishing 'hotspot' areas were created by having poor quality data, particularly during the early stages of the work. In addition to this, differences between Police and Fire data led to both an underestimation of the problem by the police and other agencies and problems in analysis of the nature of vehicle arson. Work to align Police and Fire data has been undertaken.
- **Responsibility for vehicle collection:** This primarily regarded confusion over who was responsible for the removal of vehicles under each scheme. In some cases both the police contractor and the local authority contractor turned up to remove a vehicle. However, after the local authorities integrated all the removal schemes into their working practices this problem was alleviated.
- **Fears over compensation claims:** The Local Authorities were initially dubious initially about removing and crushing vehicles immediately, without issuing a 7-day notice and keeping the vehicle for 21 days at the pound. They were fearful of compensation claims for the vehicles that were crushed, but the Police managed to reassure them that the claims would be negligible and could be offset by charging claimants a removal and storage fee. During the life of the project, six claims for compensation were made, with only a small percentage being paid out. There were a total of 50 minor complaints (not requesting compensation) regarding the schemes.
- **Intensity of resourcing:** The schemes are resource intensive with Police Officers spending approximately half an hour with each vehicle identified under the '101' Scheme (the most highly used scheme) and the Community Vehicle Scheme.



- **Cost of removals:** The schemes are also expensive with each vehicle removed costing between £25 and £40 depending on the contractor and scheme.
- **Getting Funding:** The process of getting the Local Authorities to fund the projects was time consuming. The expansion of the scheme to Somerset also led to further problems as it meant the partnership had to deal with both County and District Councils. These have different areas of responsibility with the District Council being responsible for removal of vehicles and the County Council responsible for their destruction.

## SUMMARY/ KEY PRACTICE ISSUES

The Avon Car Clear project was one of a number of funded projects that focused partly or solely upon vehicle arson. The Avon project was an extension of the original South Bristol based project. This has its roots in a pilot project that began in 1999. The project was based upon identification of 'hotspots' of vehicle arson and removing stolen or dumped vehicles from the streets. In addition to this, a substantial amount of project time was devoted to raising the awareness of vehicle arson both throughout the police service, fire brigade and the general public. The key elements of the project are outlined below.

### *Scanning and analysis*

The project was based upon a sound understanding of the problem of vehicle arson in Avon and how to respond to this. Scanning of arson data identified that over 50% of calls to the brigade related to vehicle arson and GIS analysis allowed for the identification of 'hotspots'. Throughout the project, continued analysis of data allowed for new hotspot areas to be identified and also what the main crime generating characteristics were in these areas.

### *Response*

The project worked with a number of partners to develop two main approaches to reducing vehicle arson. These were based upon removal of vehicles and raising awareness of the problem. Vehicle removal was based upon the removal of vehicles from residential areas and commercial premises, the removal of unwanted vehicles from owners and reducing the likelihood of cheap/ unroadworthy vehicles being resold. Raising awareness focused upon utilising the local media and developed project booklets to raise awareness among the police, fire service personnel and the public.

These responses were not, however, without some key problems. First, in the initial stages of the project there was some confusion over who was actually responsible for the removal of vehicles under each scheme that was being operated by the project. Second, the local authority expressed worries over removing vehicles without issuing a 7-day notice and feared that it may face a number of compensation claims. Third, the schemes are very resource intensive and require officers to spend at least half an hour with each vehicle. Finally, the scheme is costly with each removal costing between £25-40.

The Lessons learned during the Car Clear project are however, being applied to the establishment of an Arson Task Force in Avon and Somerset, and removal schemes are to be established across Somerset.

***Assessment***

Anecdotal evidence from the project suggests that there has been some degree of success in removing abandoned vehicles and reducing arson. A full quantitative assessment of the impact is given in Annex C.

## Case Study 2: Bedfordshire – Luton Arson Task Force

### INTRODUCTION TO THE PROJECT

The project was based in the Bedfordshire town of Luton. The town is situated approximately 30 miles north of London and has a population of 184,371 people. Luton is one of the most densely populated urban areas in England, though it is located within the Metropolitan Green belt and the Chiltern Hills. The population is relatively young, with 37% aged under 25 (30% is the average for England and Wales) and only 8% aged over 70 (12% in England and Wales).

In terms of socio-demographics, the profile of Luton is more similar to metropolitan boroughs than its neighbouring Bedfordshire districts. The CDRP family groupings place Luton in family three, along with 14 partnerships from the Metropolitan Police area. During 2001/02 there were a total of 21,781 'recorded' offences in Luton (118 offences per thousand population), which accounted for 42% of the total crime in Bedfordshire. As a local authority area Luton is relatively deprived. It is ranked 91st out of 354 wards. Seven of its 16 wards fall in the top quartile of most deprived wards in England, conversely, however, it does have one ward falling in the least deprived quartile.

The Luton Arson Task Force has approached arson reduction by adopting a three-pronged strategy concentrating on Environmental Initiatives, Educational Initiatives and Identification and Detection of Offender Initiatives and has established an integrated approach to arson reduction, linking into the Safer Luton Partnership, specifically the Auto-Crime Sub-Group and the dedicated Arson Sub-Group.

### PROJECT BACKGROUND

In 1998, Bedfordshire and Luton Fire and Rescue Service, in partnership with Bedfordshire Police, launched a joint arson reduction strategy. During this period, the Fire Service appointed a dedicated ARC to liaise with the Police and the partnership identified that both agencies took different approaches to data collection, terminology and working practices regarding arson and fire issues. To this end, during May 1999, an Arson Task Force was established. This worked strategically and concentrated on defining terminology, information exchange and developing protocols relating to fire scene investigation.

Further to this alliance, and specifically in the Luton area, the Arson Task Force was actively involved with the production of the Safer Luton Partnership (SLP) Crime and Disorder Strategy following the audit process conducted during 1998/99. An Auto-Crime Subgroup, chaired by the Police, (which including an objective to reduce vehicle arson), was established and the fire service are a key partner. An Arson Subgroup was also established, aiming to improve collaboration between key partners (Fire, Police, Local Authority Customer Cleaning Services and Housing).

Following analysis and the partnership working between the Police and SLP, it was decided that a dedicated team should utilise and build on the framework of procedures, systems and management structures already established and focus on arson reduction in the Luton Borough area. A bid was made to ODPM for £60,000 per

annum for the three-year period, to fund two full-time posts, the Luton Arson Task Force Officer (LATFO) and the Luton Arson Task Force Assistant (LATFA).<sup>25</sup>

The arson task force was set up against a background of increasing deliberate fires in the area. A summary of the main trends is given below.

- In 1998/99 there were 682 deliberately started fires in Luton, by 2000/01 there had been a 73% increase to a total of 1,182.
- Vehicle arson accounted for 44% of the total number of arsons in 1999/00 -an increase on the previous year when they had accounted for 35% of the total number of arsons (682). By 2000/01 vehicle arson accounted for 48% of the total.
- This year on year increase in vehicle arsons is reflected in the increase in reported abandoned vehicles. Here, there was an observed increase of 229% between 1998/99 (where 2,019 vehicles were reported) and 2000/01 (where 6,637 vehicles were reported).
- Luton accounted for 42% of the total number of fires attended by the brigade in 2000/01, 77% of these were deliberately started and 48% of those deliberately started were vehicle arson (570 incidents).

Against this backdrop, a total of £180,000 (£60k each year) was granted to Bedfordshire and Luton Fire and Rescue Service to establish a Luton Arson Task Force<sup>26</sup>. The key aim of the ATF was to provide a focus on arson activity in the borough of Luton to supplement the existing brigade wide focus. The funding was allocated directly to recruit and retain two staff members, the Luton Arson Task Force Officer (LATFO) and the Luton Arson Task Force Assistant (LATFA). Their primary role was to implement a number of interventions to reduce arson (which are outlined below). The Luton Arson Task Force operated from the Southern Area Office in Luton, and was supplemented by the brigade-wide Arson Reduction Co-ordinator (ARC), who devoted 20% of his time to the task force.

## PROJECT STRUCTURE AND ACTIVITY

Funding was granted in early 2001, with job specifications drawn up and advertisement of the posts in July 2001. Unfortunately, recruitment took longer than expected and the two successful candidates did not commence work until November 2001.<sup>27</sup> The overall responsibility for the project and line management for the LATFO fell to the Luton District Commander (the LATFO line manages the LATFA), and the Brigade ARC devoted 50% of his working time to the Luton Arson Task Force. The structure of the project (with associated activity) is outlined in Figure B3.1.

The LATFO was responsible for co-ordinating the multi-agency activity in the district of Luton to reduce the incidents of arson, increase detection rates, remove the opportunity for incidents to occur and raise awareness of the problem of arson and methods to combat it. The LATFO chairs the Luton Arson Task Force Group, a multi-agency group that forms the Arson Reduction Subgroup of the Environmental & Quality of Life Group in the SLP.

<sup>25</sup> In the original bid these posts were referred to as the Arson Reduction Co-ordinator (ARC) and the Arson Pattern Analyst (APA) respectively.

<sup>26</sup> Funding of £245,000 has been secured to continue the Task Force until 2006.

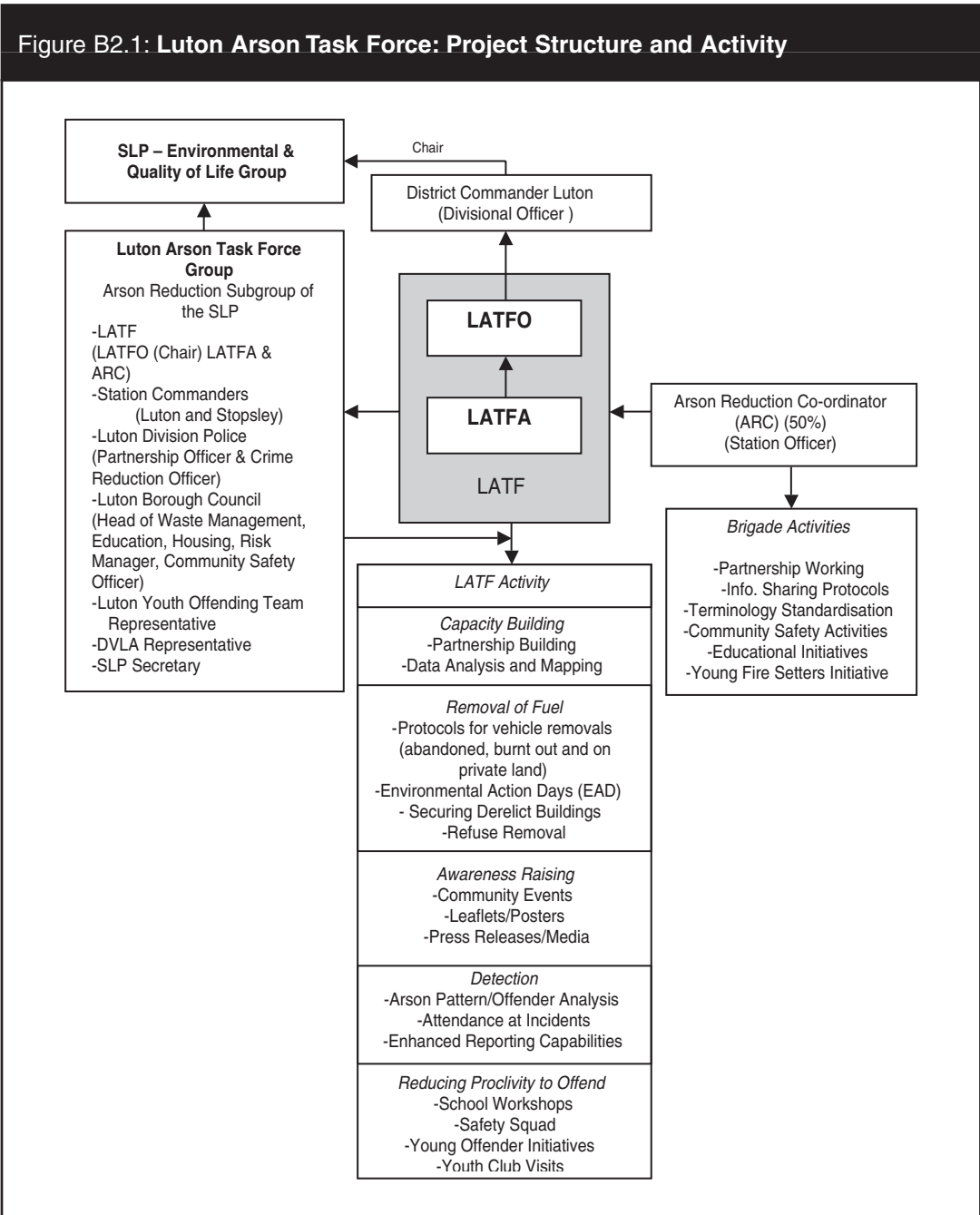
<sup>27</sup> Funding from the ACF for year one was reduced accordingly and the total for year one totalled £35,000 rather than the originally agreed £60,000.

The LATFO was aided by the LATFA, who was responsible for assisting in investigations of arson and the development of intelligence on arson. This was primarily done by utilising information provided by the agencies in the Luton Arson Task Force Group. This enabled the assistant to map arson patterns, identify hotspots, trends, patterns, and the causes of incidents.

The LATF were heavily involved in the establishment of the partnerships and were instrumental in implementing a variety of interventions in the borough of Luton. The key activities of the project are outlined below.

### ***Capacity Building***

- **Development of partnerships:** Many of the achievements of the LATF would not have been possible without extensive groundwork and partnership working. The building of these partnerships with other agencies and the conducting of analysis to inform and guide intervention development are crucial to a project such as this. Even before the establishment of the LATF much work had been undertaken to establish strong, coherent partnerships between the major stakeholders in the borough such as the SLP and the Police.
- **Review of data analysis:** Although data collection and mechanisms for storage and analysis of the data had begun, the upgrading of the systems became a priority during the preliminary stages of the LATF. These are now effective and permit a wide range of data analysis. The LATFA produces quarterly reports, detailing the incidents in Luton, comparing them to the brigade wide picture, and focusing on type, location and time of incident, and highlighting wards with problems. In addition, the Police detection rates are examined, and malicious calls are analysed. A GIS mapping system is used to create maps showing overlays of the data.



**Removal of Fuel**

One of the three strategies implemented by the LATF are Environmental Interventions. These focus on the removal of fuel (primarily vehicles and refuse) across the Luton Borough. To this end a number specific activities have been undertaken.

- Abandoned Vehicle Removals** – this was an existing agreement between the partners (Fire Brigade, Police and Local Authority) to remove vehicles promptly. By utilising increased data exchange made possible under section 17 of the Crime and Disorder Act between the Police and LBC, vehicles could be identified as abandoned and checked with more efficiency and speed. This scheme commenced in November 2001 and 10,057 vehicles had been removed by December 2003.

- **Promotion of the Owners Request Scheme** – the LATF advertised and promoted this existing scheme, providing details of the Abandoned Vehicle Hotline in their leaflets on arson prevention.
- **Burnt-Out Vehicle Protocol** – this was based on an agreement between the Police, LBC, Fire Brigade and private contractor that all burnt out vehicles would be removed within 24 hours of notification by the contractor. The removal of already burnt vehicles, although perhaps not preventing arson, permits a two-strike approach. Firstly, it clears up an area rapidly, aiming to prevent further vandalism or burning of vehicles. Secondly, by removing all vehicles to a central area, the Police Vehicle Examiner can examine vehicles en-bloc, reducing the time taken to examine and collect information relating to cause and motivation. Under this protocol, 688 vehicles have been removed since its inception in June 2002. This protocol is currently being extended to cover the whole of Bedfordshire and is due to go live in 2004.
- **End of Life Directive** – the LATF was involved with consultation on the end-of-life directive, which, since its introduction in April 2002, has impacted on the number of abandoned vehicles. This was linked into the promotion of the Owners Request removal scheme, aiming to reduce the number of abandoned vehicles and promote the free removal by LBC.
- **Devolution of DVLA Powers** – The LATF was successful in encouraging the local council to obtain DVLA powers. Following this, 259 vehicles have been removed using the immediate removal of untaxed vehicles provision.
- **Marsh Farm New Deal Environmental Day** – the LATF were heavily involved in this multi-agency day, conducted by the LBC. This event enabled residents of the local areas to get dispose of unwanted items through a number of different collections, and permitted the dissemination of information to the public regarding methods of discarding unwanted items in future (such as the promotion of the owners request vehicle removal scheme). A total of 15 industrial skips were filled with unwanted items that may have otherwise been discarded to become future fire hazards, and 25 abandoned vehicles were removed.
- **Environmental Action Days (EAD's)** – these multi-agency operations are held in areas identified through the analysis as being 'hot-spot' areas, where vehicle and refuse arson is prevalent. The area is targeted by a number of agencies and refuse/abandoned vehicles are identified and removed, derelict buildings are made secure and pavements and street lighting are checked. In addition to this, schools and commercial premises have been offered advice and risk assessments. Sixteen EADs were executed between June 2002 and December 2003.

### ***Awareness Raising***

A number of steps have been taken to raise awareness of the work of the ATF. This included promoting the work within local partners, the public and also utilising the local media. This is outlined below.

- **Promotion of initiatives with partners:** Falling under the LATF Educational Intervention strand, raising awareness of the dangers of arson and its consequences has been a key element of the work of the LATF. Throughout meetings with internal and external groups the LATF have aimed to improve

knowledge of the problem of arson and the impact on the locality. Both officers of the LATF attend meetings of various Community Safety and improvement groups (local area forums), providing expertise and advice to these groups and aiding in events organised.

- **Promotion of initiatives to the public:** Initiatives have also been promoted to the public via stalls at community events, fire station open days and crime stoppers open days. Posters and leaflets have also been designed. These are generic arson reduction leaflets, and advertise a variety of interventions (primarily the vehicle hotline and removal schemes). These also promote the LATF as an organisation and give details of the Crime Stoppers numbers to encourage public reporting of information relating to incidents of arson.
- **Working with local media:** Press releases and promotional material for the various schemes and comments on arson incidents in the locality are frequently given to the local media. Both officers were also involved in a local television programme detailing the work of the LATF.

### ***Diversions Schemes and Reducing Proclivity to Offend***

These interventions also fell under the Educational Intervention strand of the LATF project. The LATF assisted the Community Fire Safety Officer in developing the Juvenile Fire Setters Scheme and liaised with the Youth Offending Team to secure additional referrals. They have also assisted in the delivery of various youth related schemes by giving workshops to local school children, facilitating an educational session at the local Youth Offending Team Attendance Centre and providing a session on the dangers of arson to a YOT summer school. They have also been involved with a multi-agency Safety Squad, providing local youths with information regarding arson and its consequences.

### ***Detection – Co-ordination with Police Force***

The interventions here fall into the third strand of interventions developed by the LATF, namely, Identification and Detection. Integral to these interventions are the analysis of data, the provision of detailed and accurate reports on incidents and the suspected motivations/causes of arson. In more detail, this element of the work includes:

- **Conducting detailed analysis of arson incidents:** The provision of information links to the vehicle removal schemes, which have enabled the police to raise their investigation of burnt out vehicles and provide the LATF with information relating to the causes and suspected motivations behind the incidents. This arson pattern analysis has focused the various interventions and provided a focus to the previously discussed interventions, as well as targeting investigative and detective interventions. Caller detail analysis has also been conducted, with a view to combating hoax calls (another target in the SLP strategy).
- **Establishing protocols for data exchange about arson incidents:** Linking back to the establishment of partnerships and the work to facilitate data exchange, the LATF have proactively sought to formulate links with the local Scenes of Crime Officers, the Vehicle Examiners and the CID and the FIB (Force Intelligence Bureau) of Bedfordshire Police. A memorandum of understanding has been drawn up by the ARC between the police and fire brigade, setting out areas of joint interest, working practices and recording procedures. This is



designed to ensure the appropriate levels of data exchange exist to facilitate effective investigation.

- **Attending arson incidents to investigate causes:** The LATF attend arson incidents to provide advice on fire site investigation and aid the police in their investigations (with the aim of increasing the detection rates of incidents and increasing the risk of prosecution for offenders). Their presence in a liveried vehicle is also hoped to have a deterrent effect. The use of CCTV information and the promotion of the ANPR system to combat vehicle crime (and arson) have been heavily promoted by the LATF, who are encouraging the police to be more proactive in their response to arson.
- **The Quick Strike Initiative:** Where analysis reveals either serious or serial arson incidents, the task force produce specific guidance to be delivered within the target area (i.e. local flats have recently had a series of bin-room fires, letters and leaflets were sent to all residents). This guidance calls for public assistance and provides contact details to report suspicious behaviour or concerns, as well as details on how to reduce risk.

## PROBLEMS ENCOUNTERED

The LATF have reported few problems, and those in evidence have been overcome. The problems faced are:

- **Initial Scepticism from the Brigade** – the initial concept of the LATF was viewed with slight scepticism by the operational team during the initial stages of the project. There was a feeling that the brigade was there to put out fires and not to stop them from happening. These feelings have abated as the LATF have increased awareness of the potential impact the brigade can have in arson prevention and reduction.
- **Recruitment** – the recruitment process took longer than anticipated and led to a period of funding being lost.
- **Staff Training and Promotion** – the support network initially planned for the LATF has been reduced due to the support staff being required to participate in training and being promoted (thus leaving vacant positions). This has led to the LATF being stretched and the educational and detection strands of the intervention not receiving the planned input.

## SUMMARY/ KEY PRACTICE ISSUES

The Luton Arson Task Force was a project that was already being developed before funding from ODPM was received. The ATF was established in May 1999 and the ODPM funding helped to further establish the task force in the Luton area. Its work has been based upon developing a holistic approach to arson reduction. Its key elements are summarised below.

### *Scanning/Analysis*

Initial scanning of data showed that there had been a 73% increase in the number of deliberately started fires in Luton between 1998/99 and 2000/01. A total of 42% of all of the brigades deliberately started fires were in the town. It was also observed that the proportion of fires that were related to vehicles had increased from 35% of deliberate

fires in 1998/99 to 48% in 2000/01. Over the same period there was an increase in abandoned vehicles of 229%.

Scanning of data therefore recognised that a problem of some magnitude existed. The AFT was however also committed to continual monitoring of arson patterns across the area and therefore emphasis was put upon developing robust data systems. Regular reviews of data took place, systems were upgraded and a GIS system was used to identify hotspots.

### ***Response***

A holistic response was developed focused upon the town of Luton and based upon the removal of fuel, awareness raising, diversion and increasing detections. The removal of fuel focused upon interventions with vehicles and refuse; awareness raising focused upon promoting initiatives with partners and the public; the diversion element of the project primarily included working with the local Youth Offender Team and increasing detections included working with the police to analyse incidents and investigate their causes.

### ***Assessment***

The responses implemented by the project all represent coordinated targeted strategies developed to reduce the identified problem of arson in specific areas. A full quantitative assessment of their impact is given in Annex C.

## Case Study 3: Cumbria Rural Arson Audit Scheme

### INTRODUCTION TO THE PROJECT

Cumbria is predominately a rural area with a population of just under half a million people. It attracts many visitors to the Lake District National Park and has a large farming community. Carlisle is the only town of size in the county (pop: 101,900) and the most densely populated area. The overall demographic composition in Cumbria broadly represents the national pattern, though most areas tend to have larger proportions of elderly people, aside from Barrow-in-Furness, which has markedly more 5-13 year olds than the average across the county. Barrow-in-Furness is also the most socially deprived area in the county, although Copeland also features in the top quartile of deprivation. Conversely, two of the other areas in Cumbria, Eden and South Lakeland, are relatively prosperous, falling within the bottom quartile. There is concern that the economy of the area is at some risk from declines in heavy industry, agriculture and tourism on which it is dependent, though Cumbria does have relatively low crime rates. Although crime increased 14% between 2001 and 2002, it increased by less than 1% between 2002 and 2003. There were 76 recorded crimes per thousand 2002 and 77 in 2003, a total of 20% of households were affected by crime in 2002, this reduced to 16% in 2003.

Historically, most fire prevention activity in the county has been focused in the more urban areas of Cumbria, as these are the only areas with whole-time fire personnel. Carlisle experiences a particular problem with deliberate fire setting, with up to 80% of fires in the most deprived districts recorded as deliberate. Arson audits have been conducted in Carlisle, which has increased the profile of the brigade in the community, and attempts have been made at addressing the problem of abandoned or stolen vehicles. Furthermore, over the past few years, systems have been developed to collate all FDR1 and FDR3 information in Carlisle. In turn, this information has been provided to the local authority and the police. Attempts at replicating such information sharing has been more sporadic in other areas and occurred on a more ad hoc basis. However, it is acknowledged that some semi-rural areas located on the periphery of socially deprived urban areas also experience a significant incidence of arson, but fire prevention activity is not always possible in these areas due to the lack of whole-time staff.

### PROJECT BACKGROUND

It was observed that particular arson problems existed in Cumbria in locations that are often difficult for the brigade to access. In 2000/01 there were 2,000 deliberately started across the county accounting for 54% of all fires recorded by the Brigade. Of the fires deliberate set, a high number were concentrated in rural areas, especially those that border on the periphery of more populated, socially deprived, urban areas. These areas are often more difficult to access which, when coupled with the resource constraints of such a rural brigade, means that it is difficult to deliver fire safety and arson prevention advice. The problem of arson in these areas was further exacerbated by the declines in the farming industry. Like other industries, there is often a correlation observed between incidents of arson and a decline in the local economy. Therefore the focus of the original bid made to ODPM was to target farms and businesses in rural

areas to raise awareness of arson, fire safety and general crime prevention issues through the provision of arson audits.

## PROJECT STRUCTURE AND ACTIVITY

As a result of the project bid, a total of £36,000 was awarded to Cumbria fire safety team to employ two personnel to conduct audits between July 2001 and July 2002. Of the two personnel employed on the project, one was a retired fire officer and the other was previously employed in industry. The qualities of these personnel were of critical importance to the success of the project, since rural communities are often suspicious of outsiders and gaining the trust of these communities was essential. The management team believe that the personalities of the staff involved were responsible not only of its success, but that their self-motivation allowed the project to virtually 'self-manage'. The project was managed from Fire Service Headquarters in Cockermouth under a Senior Divisional Officer. Line management of the two personnel recruited to complete audits was the responsibility of an ADO. However, due to the previous experience of the staff recruited and their knowledge of the relevant issues, management was fairly "hands-off" and mainly steered through quarterly reviews.

The rural arson audit scheme was developed as a response to the arson problems in more rural areas and the lack of fire safety provision in those areas. This did however present some problems with data analysis. At the commencement of the project thorough analysis of the problem could not be conducted as data systems were not robust enough to analyse fires by rural premises such as farms. In addition, farms are suspected of often failing to report small fires, suggesting that the data does not reflect the true rate of arson in such premises. These recording problems have partly been remedied by the project as new data systems have been put in place that can readily identify rural premises such as farms.

Following appointment, the project staff received training in a number of areas including:

- Auditing
- Arson prevention in factories, offices, shops, residential communities and vehicles crime and disorder strategies
- Workplace regulations
- Crime prevention.

Input from the Environment Agency was also provided. Essentially the audits were to be provided in line with brigade guidance for risk assessments, but an audit pack was also developed specifically for the project. The audit packs were designed in liaison with the police, as well as agricultural and environment agencies, the latter being particularly keen to reduce the adverse effects of fire on the countryside. The packs included crime prevention advice as well as fire safety information. The integral part of the pack, the audit, scored premises according to whether the degree of risk was 'normal', a 'potential hazard', a 'considerable hazard' or an 'extreme hazard'. This was based on a number of criteria. This include:

- Unexplained fires on the premises in the past 5 years
- The incidence of possible deliberate fire damage in the locality or in similar businesses

- Problems with neighbours
- Labour relation issues
- Levels of public access/ isolation

In July 2001 the two personnel began undertaking audits independently of one another. These included conducting 'type A' and 'type B' audits. Type A audits were those where the personnel entered the premises and scored the fire risks in the premises and delivered appropriate advice. Type B audits were those where the proprietor of the property was unable to facilitate an audit and packs were left for self-completion. Properties were targeted in liaison with local retained fire personnel and divisionally based officers. Aside from delivering the information in the pack and the audit itself, the auditors also checked the farmers/ businessmen's dwellings where required and installed smoke alarms free of charge. They also security marked property with UV markers and promoted fire safety awareness by delivering specially designed leaflets and posters regarding vehicle and dwelling fires. Advice was also given to councils and community groups and the project was promoted through local radio, television and newspapers.

Though the initial set up phase of the project ran smoothly, the project implementation faced problems as it coincided with the outbreak of foot and mouth disease. This made access to farms impossible for the majority of the period. Consequently, the initial delivery of the project concentrated on rural businesses that were believed to be prone to arson attacks by virtue of their proximity to urban areas. The businesses targeted were defined as 'small' in that they employed less than 5 employees and were therefore not legally required to have a written risk assessment in compliance with Workplace Regulations (such as small shops, garages, and cafes). By March 2002, the outbreak had cleared and it was therefore possible to begin to enter farm premises. Consequently, over 100 farms were eventually visited. By the end of the project 757 premises had been audited under Type A Audits (that is those in which the personnel entered the premises and scored the fire risks in the premises and delivered appropriate advice) and 593 Type B Audits (that is visits in which the proprietor of the property was unable to facilitate an audit and packs were left for self-completion). The area where most audits were conducted was Penrith (122 audits). Of the three areas identified as particularly problematic, Maryport received 65 audits, Longtown 22 and Ulverston 33. However, many more audits were also conducted in their surrounding areas.

The audits were followed-up via a quality check conducted by fire safety staff. One in eighteen of those who received type A audits were contacted by telephone and this revealed that the majority found the process useful and that there was an increase in safety awareness. Further anecdotal evidence suggested that the project was well received within the isolated communities it targeted. The increase in profile of the fire service in rural areas, particularly during such a difficult period for their communities, had positive implications for both the Brigade and the local populations. It had been suggested that some farmers and rural business people appreciated the fact that they were receiving some form of support in a period in which their communities were isolated by foot and mouth. Relationships with some partnership organisations have also been further strengthened by the project. Whilst many relationships were under Crime and Disorder activities, the National Farmers Union and The Environment Agency also proved useful allies. In fact it was reported that the Environment Agency would have liked to have had a bigger role in the project, and would have liked to have seen the project period extended.

Though the feedback from those in receipt of the audit appeared positive, it was not possible for the brigade to maintain such a persistent high profile in rural areas due to resource problems. During the project period, it was felt that there were too many visits to complete for two members of staff, and from July 2002 the regular auditing of rural premises ceased with the end of project funding. Despite this, the brigade has employed retained fire fighters in these areas to conduct some community safety tasks such as home visits, and some arson prevention work.

## PROBLEMS EXPERIENCED

As with most projects some problems were encountered. These have partly been outlined above and are re-iterated here:

- **Resource problems:** It was generally felt that the project was under resourced in terms of being able to conduct all of the audits required. This was primarily due to having only two staff to cover the whole area.
- **Targeting the correct areas:** Targeting the highest risk premises can often be a problem if all fires are not reported. Therefore, the project made strides to try and ensure the reporting and recording of as any fires as possible.
- **Exit strategy:** As with most projects where funding ceased, many involved felt the project had not really run it's full life-course, or could have achieved more if allowed to run for longer.
- **Foot and mouth disease:** Little could have been done by the project to avoid the foot and mouth crisis. However, in such project areas it shows that sometimes one has to try and be prepared for any eventuality.

## SUMMARY/ KEY PRACTICE ISSUES

The Cumbria project was novel in that it targeted rural communities. The project focused upon conducting arson audits in rural areas, though other prevention activity such as the promotion of general fire safety through poster and leaflet campaigns and advertising the project through local media also took place. A summary of the key practice issues is given within the SARA analytical framework below.

### *Scanning and analysis*

Original scanning of problems in rural areas appears to be based upon 'proxy' measures of a perceived problem. Officers has observed that there were a high proportion of deliberate fires in rural areas, though data systems were not robust enough to conduct detailed analysis of the problem until later in the project. It was felt by project staff that the increasing number of fires in rural communities was tied in with economic and social problems.

### *Responses to problems*

A clear response to the problem was developed through the arson audits. These responses appeared to be well received by those in receipt and were particularly helped by working with partners such as the National Farmers Union and The Environment Agency. Some problems were encountered with the implementation. First, the project was implemented during the foot and mouth crisis and therefore access to farmers was restricted. As a consequence of this the response was targeted

towards other rural small businesses such as shops. The second key problem related to resources. It was apparent that the two project personnel were not able to cover all of the areas where audits were required. Therefore, retained fire fighters have conducted some similar work in rural areas.

### ***Assessment of responses***

The project team conducted some assessment of feedback from recipients of the audits. This feedback tended to be positive and anecdotal data suggested that rural communities appreciated support from the brigade at the time of the foot and mouth crisis. Quantitative assessment of the impact of the project is given in Annex C.

# Case Study 4: Merseyside Ethnic Minorities Arson Awareness and Reduction Team

## INTRODUCTION TO THE PROJECT

The focus of the project was the City of Liverpool and the inner urban area of Toxteth. Both of these areas are in Merseyside, which is a large metropolitan area with a population of 1.36 million people. Many of its residents live within the city of Liverpool (about 440,000) and over 300,000 are resident in the Wirral. There are a disproportionate number of young people living Merseyside. This is largely a result of the number of those under 24 years of age living in Liverpool and is boosted by the cities universities. Merseyside is one of the most deprived areas in the country. Knowsley and Liverpool feature as the second and third most deprived areas in England, and all but five areas in Merseyside are within the top quartile in terms of deprivation. Despite this, crime rates are not as high as in some other metropolitan areas, with 108 in every thousand residents being victimised in 2002 and 120 per thousand in 2003, this being a 8% increase in total number of recorded crimes between 2002 and 2003. A total of 22% of households experienced at least one incident of crime in 2002, but this fell to 15% in 2003.

The overall pattern of crime in Merseyside is disproportionately concentrated in the city of Liverpool, particularly the city centre and inner city areas such as Toxteth. Generally, Merseyside has suffered economic hardship with the decline of the seaport and its associated industries. However, Liverpool city centre has seen much inward investment in recent years and has developed as a major retail centre and, like many British towns, it has a thriving nocturnal economy. The Toxteth area is located approximately 2 miles from the city centre. The area is well known for the social problems that were highlighted during the inner city riots of the early 1980's.

Both the city centre and Toxteth areas house large numbers of non-English speaking communities. This represented a problem for the fire brigade, as these groups are hard to reach in terms of delivering fire safety messages. The difficulty of delivering fire safety to communities with language, religious and cultural barriers became apparent during the fire safety work that had previously been conducted in these communities. Any past attempts to intervene in these areas were exacerbated not only by language barriers, but also by a general suspicion of such interventions amongst the local communities. Toxteth houses a large number of Somali and Yemeni residents (approximately 5,000) and, and the City Centre houses a large number of Chinese residents (approximately 16,000 throughout Liverpool). Toxteth also has over 50% more malicious fires than the average for Merseyside. Rates of both fatal and non-fatal fire injuries are also higher here.

## PROJECT BACKGROUND

The intention of the project was to:

- Appoint a number of bi-lingual advocates who would be able to forge links with non-English speaking communities.
- To deliver fire safety advice in the home and to relevant community groups.



- To work with existing youth intervention schemes.

A total of £60,000 was received from the ACF towards the project in April 2002 and allowed for three advocates to be employed.<sup>28</sup> Previous to the ACF project funding, Merseyside Fire Service was already proactive in the field of fire prevention through the Community Safety Team. The brigade has been active in the reduction of hoax calls, vehicle crime, working with schools and in youth interventions such as the FACE programme (Fire awareness child education). Under the ACF funding there was also an expansion of youth services (this is discussed below). However, one of the main activities of the service was fire risk assessment work in the community and in particular in the home. This was the basis for the current project.

## PROJECT STRUCTURE AND ACTIVITY.

### *Capacity Building*

Though the project received funding in April 2002, there was a great deal of ground work which had to be completed before the project could be implemented in earnest. The advocates did not commence their month long training until September 2002, and did not begin delivering home risk assessments until October/November of the same year. It is important for any brigade wishing to replicate such an intervention to pay close attention to the pre-implementation requirements of such a project in order for it to be effective. These primarily include issues around establishing a steering group, establishing links with the local community and advertising of posts. These are outlined in detail below.

- **Establishment of a Steering Group:** In order to direct the activities of the advocates, and indeed the team itself, a Steering Group consisting of both fire safety and local community representatives was established through the brigade's Equal Opportunities Department. The make-up of the group was important for understanding the intricacies of the problem and for establishing links with the community representatives that would allow the project to progress. More than 30 organisations are represented on the Merseyside Steering Group, including women's groups, health workers, social workers, community development teams, housing associations, cultural centres, religious groups, government offices and fire service groups. Clearly the nature of these groups facilitates a wider community safety approach rather than just fire safety. The Group meets quarterly to discuss the project and to assist with introductions to other useful contacts. The members meet in community venues where the meetings are open to all. This has proved essential to provide a sense of community ownership of the scheme. Members of the group also provide advice and assistance outside the formal meetings and this has proved extremely useful to the project. It is envisaged that the group may also be able to assist the fire service make in-roads into the Asian community, which has been difficult to achieve due to the level of funding received.
- **Staffing:** From the outset Merseyside were mindful of the importance of both the manner in which they recruited the staff for the project, as well considerations for the advocates training and continuing employment. Following the success of the ACF bid, a recruitment campaign was launched in close consultation with the Brigades Equal Opportunities Department. The campaign was focused in the

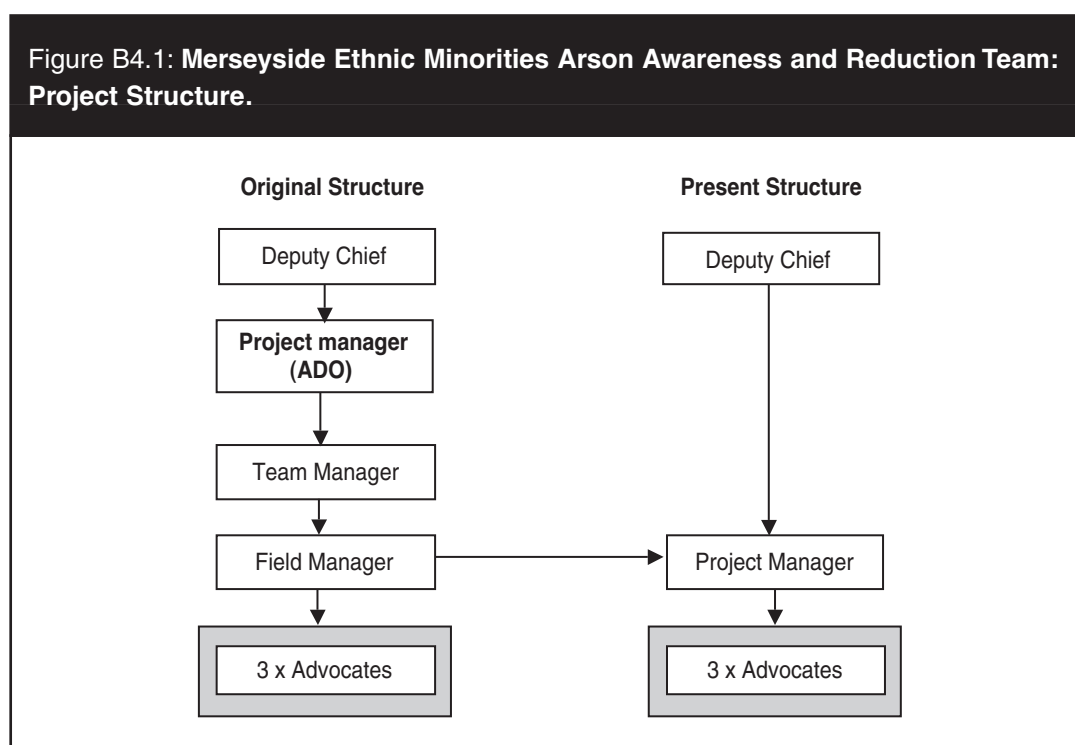
<sup>28</sup> The project will now run until at least March 2005, here we cover the period up to December 2003.

communities where it was intended the advocates would work, and open days were held in order to establish a presence in the communities. A conscious decision was made to employ female advocates due to cultural considerations that suggested male advocates might have difficulties in approaching females from ethnic minority backgrounds. Three advocates were eventually appointed, one Yemeni Arabic speaking, one Somali and one Cantonese/ Chinese speaking. They received one months training in delivering fire safety advice, including three days "FACE" programme training before commencing duties.

- **Staff representing the Fire Service:** It was also felt important that the advocates should have a role in representing the Fire Service in these communities, both in order to raise it's profile and to establish an authoritative presence. The advocates therefore wear a fire service uniform and are provided with a marked van. They are regarded as fire personnel in that they are tackling fires in a preventative sense and have received in depth training to the same standard as other fire safety staff. They are based in fire stations in Merseyside. It was also hoped that the scheme could potentially improve recruitment amongst ethnic minorities although this has not, to date, been evident.
- **Establishing links with local community groups:** Establishing good links with the target communities and building the trust amongst community members is of paramount importance to the success of such a scheme. Minority communities often feel isolated and suspicious of outside interventions, since their customs are often not understood. For this reason, it is word of mouth, rather than any other means, that engages community members in such a scheme. It is quite possible that if implementation is attempted without due consideration of all relevant factors, more harm than good could be achieved as communities become more resistant to outside involvement. The Steering Group was obviously of great importance in forging community links, but this was also the role of the advocates and indeed the whole team. The importance of the relationship with the communities cannot be overstated, but such an approach does not lend itself well to meeting quantitative targets (such as numbers of home risk assessments). It was felt that if the communities could detect that the fire service were only there as a means of meeting targets, they would be less receptive to their presence. For this reason, the team have forgone the attainment of targets in favour of strengthening community links through attending relevant meetings and holding surgeries in the communities. In the long term this will undoubtedly reap dividends as the fire safety message can be spread.
- **Advertising:** Whilst many of these communities will only be reached through personal recommendation, the Merseyside team also advertised for both recruitment and awareness purposes in publications relevant to the communities concerned. Aside from the usual media coverage, such as local newspapers and radio programmes, the scheme was advertised on local Chinese radio, and in national publications such as the Muslim News. The BBC2 Newsnight programme also covered the project.

The steering group were able to give direction to the project, however a clear management structure was also established which helped to both direct, implement and monitor project progress. The original management structure of the project is shown in figure B4.1 below. However, this was streamlined in April 2003 in order to make the project more cost effective. The ADO was removed from his position as project manager and his duties were transferred to the field manager who took virtually

complete responsibility for the project. However, the Deputy Chief Fire Officer responsible for fire safety remained in place overseeing the project.



As part of their role in liaising with ethnic minority groups the advocates were involved in a range of activities. These are summarised below:

- There were over 163 meetings with community groups to advertise and implement the project.
- A total of 54 open surgeries at various community venues, designed to generate home fire safety checks and deliver the Fire Safe message were conducted.
- A total of 250 home risk assessments in non-English speaking homes. This included conducting standard fire risk assessments with the advocates translating and completing the forms in English.
- Presentations were made in 23 schools. A number of these were schools where there were a high proportion of pupils from ethnic minority populations.
- There was involvement with the legislative Fire Safety Inspector – in discussions with businesses contravening legislation where there were language barriers.
- Advice and support on ethnic minority issues was given to the rest of the brigade.
- A training package was developed and has been delivered to carers within the Chinese community.
- Fire Safety literature was translated into a number of languages.
- Six FACE (Fire Awareness Child Education) visits, aimed at 4-12 year olds, who are at risk of committing arson, and their parents were generated through the fire safety work. Work with the FREE (Fire Reduction through Engagement and Education) team was also investigated, but there were few referrals from Yemeni, Somali or Chinese speaking communities, as fire setting by people indigenous to these groups is not regarded as a major problem.

- The advocates also took a role in the reporting of fire hazards such as abandoned vehicles and refuse in ethnic minority communities. This was achieved by forging links with organisations such as tenants associations, with possible hazards reported to the police or relevant housing associations.
- The advocates were also utilised by the Domestic Violence Unit.
- It is also intended that the advocates will take a role in introducing work with ethnic communities to the rest of the service. It is hoped that this will assist in alleviating preconceptions about such groups.

Some feedback has been received from the recipients of the visits in questionnaires conducted by Liverpool John Moores University as part of the local evaluation. A total of 62 questionnaires were returned from people who had been in receipt of the service. The majority were either satisfied or very satisfied with the service received from the advocates. Further anecdotal evidence suggested that the communities in receipt of the service were grateful that the brigade had begun to recognise some of the arson related problems experienced within their communities.

## PROBLEMS EXPERIENCED

Though the project has made a number of in-roads in delivering fire awareness information to ethnic minorities, a number of problems were encountered through the project that are worthy of note. These are outlined below.

- **Staffing issues:** Finding the correct staff in terms of language skills and knowledge of the local area is essential if such a project is likely to be a success. In Merseyside, staffing issues delayed the start of the project.
- **Understanding cultural diversity in the community:** Whilst the ACF bid focused on the appointment of bi-lingual advocates to deliver fire safety advice in ethnic minority communities, it became apparent that access to such communities can sometimes not only be problematic due to language barriers, but for other more complex cultural reasons. This was apparent with Muslim communities. The advocates were able to reach the Muslim community in terms of language, but as there were no Muslim advocates it was difficult to make in-roads into a community that abides by a strong set of specific religious rules. Furthermore, the emphasis on language during the recruitment campaign rather than religious or cultural issues meant that there were still some difficulties in reaching community sectors that shared a language but not the same religion. The advocates did, however, come from similar types of communities and were thus able to show tact in approaching such communities and an understanding of both religious and cultural customs.
- **The gender of staff:** It was also evident that the gender of advocates occasionally influenced their ability to gain access to certain communities. The employment of female advocates was a conscious decision, made to avoid potential problems of males entering homes where there may only have been a female present. However some groups, such as the 'Somali Male Group', will not accept the authority of females.
- **Religious needs of staff:** Provisions for the religious needs of the advocates themselves were not fully appreciated at the commencement of the project either, although these issues were eventually addressed.

In summary, the project manager suggested that in such a project, one would need to consider the religion, culture and language of the person, rather than simply focus on their language.

## **SUMMARY/ KEY PRACTICE ISSUES.**

The Merseyside ethnic minorities awareness project showed similarities to a number of the NPI projects in that it tried to deliver advice on fire safety and arson to a group identified as experiencing problems that had not previously been subject to such intervention. The group identified in Merseyside were however, probably the most difficult to approach out of all of the projects evaluated. The project began in April 2002 and is summarised below.

### ***Scanning and analysis***

Scanning and analysis of quantitative data were not as important here as in many other projects. The problem was identified through both fire data and also local knowledge of officers which suggested that many communities affected by fire/ arson in Merseyside were ethnic minority groups, and that it was hard for the brigade to help this community as it was particularly difficult to access due to cultural, religious and language differences.

### ***Response***

The response to this problem was based around raising awareness within these communities. However, the response was carefully considered in a steering group before implementation. As a result, three advocates were employed that had local knowledge and were all from ethnic minority backgrounds. It was the job of the advocates to gain access to ethnic minority communities to deliver key messages through a variety of mediums. These included (for example) conducting home risk assessments, distributing fire safety literature and holding open surgeries in community venues. The advocates have also given advice to the rest of the brigade on ethnic minority issues.

The response was not however, without its problems. First, the correct type of people had to be employed as advocates and thus the recruitment process took longer than otherwise may have been hoped. Second, the advocates had to be tactful in gaining access to ethnic minority groups and no 'cold' calling approaches were made. Contact was generally through word of mouth. Third, even though the advocates showed tact in their approach, cultural factors were sometimes a limitation. This was apparent in the Somali male group that would not accept the authority of females (all of the advocates were females).

### ***Assessment***

The aims of the project were to reduce fire/arson in ethnic minority areas in Liverpool city centre and Toxteth, though the project was primarily concerned with developing a closer link to these communities and potentially increasing recruitment from ethnic minorities. There is little anecdotal evidence so far that suggests recruitment has been affected by this project though there is a suggestion that relations have been improved. Quantitative assessment of the impact will be measured using the data for deliberate fires in the Toxteth and City Centre areas. This is presented in Annex C.

# Case Study 5: Northumberland Arson Reduction Coordinator

## **INTRODUCTION TO THE PROJECT**

Northumberland is a predominately rural area with an ageing population. The total population of the area is just over 300,000, though over 80,000 (27%) of Northumberland's residents are concentrated in Blyth Valley where the population is younger than the rest of the county. Wansbeck is the next most populated area with over 60,000 (20%) of all residents. This is also the most socially deprived area in the county and features in the top quartile of most deprived areas in the country (DETR, 2000). Conversely, Tynedale, which has a similar population, is one of the least deprived in the county. Crime rates are increasing in the county, with an increase of 19% between 2002 and 2003. The recorded crime figures show that less than 10% of the population were victimised in 2002, with this rising to 12% in 2003. Despite this the British Crime Survey suggests that 20% of households fell victim to crime during 2002 with this reducing to 19% in 2003.

In total, 61% of incidents attended by the brigade are deemed to have been deliberate and the highest incidence of arson are concentrated in the most socially deprived areas, namely Blyth Valley, Wansbeck and Castle Morpeth. Environmental arson was identified by the Northumberland arson scoping study as a particular problem for the brigade with vehicle fires and refuse fires being particular problems. As a result, a bid was made to employ an arson reduction officer to address this issue over a three-year period. The funding received, totalling £64,650, covered salary and transport costs. Some matched funding was also provided by the fire service, police and other partnership agencies and was also sought from other sources such as the Single Regeneration Budget.

Vehicles, refuse and derelict buildings were specifically addressed by the project by means of the removal of opportunity to commit arson, though the project also focused upon educating potential victims and deterring offenders. Accordingly, interventions to remove rubbish in partnership with the CDRPs, remove abandoned vehicles more swiftly in conjunction with the police, secure derelict buildings in partnership with local authorities, police and demolition contractors and advertising and education schemes have all been implemented.

## **PROJECT BACKGROUND**

The Arson Reduction Coordinator (ARC) took up post in April 2001. The post helped to implement a number of strategies that are a direct result of ODPM New Projects funding, however the post also helped to facilitate a variety of other activity in the brigade. Most of this activity was conducted through the Fire Safety Academy. The academy currently employs 11 staff and they work from the same office as the ARC at Brigade HQ in Morpeth.

The type of activity conducted by the NPI project and the Fire Safety academy were relatively new in the brigade and represented a move away from the traditional 'reactive' fire-fighters role of simply responding to call outs to fires to a more 'proactive'

preventative approach. To fully understand the development of the project within this area and its associated activity it is necessary to highlight some of the scoping and analytical work conducted in the brigade prior to the inception of the project.

### ***The Northumberland scoping study***

Before April 2001 there was little arson reduction work being undertaken in Northumberland, though work conducted by the present ARC highlighted a number of areas where the brigade could productively develop strategies to reduce arson. These areas were highlighted in the Northumberland Arson Initiative Scoping study. This study was a multi-agency initiative funded through the Northumbria Police Authority Grant pool and acted as the foundation for the current project (total amount of grant £27,510). The research for the study began in December 1999 and was completed during 2000. The Arson Initiative had a steering group made up of representatives from the fire and rescue service, police, community safety strategy, district councils (Blyth, Wansbeck, Castle Morpeth) and the Youth Offending Team.

The data analysis for the study was based upon analysis of brigade statistics- primarily of malicious fires and all FDR1 and FDR3 fires. This provided the initial 'scanning' for arson incidents in the area and highlighted that:

- Northumberland had a slightly higher rate of arson at 52% of all fires to the national average of 47%. This placed Northumberland eighth out of 49 brigades.
- The South East corner of the county was experiencing the highest increases in malicious fires. In one town there was a 10% rise between April 97-98 and April 98-99.

Further analysis of the arson data allowed the team to gain an insight into the nature of the problems they were facing. Here, it was observed that:

- Motor vehicles were most likely to be the target of deliberate primary fires in 2000.
- The peak times for deliberate vehicle fires were between 23.00 and 00.00 hours.
- The highest proportion of deliberate secondary fires were for undergrowth fires, though a significantly high number were also rubbish fires, bonfires, bin and skip fires.
- The peak times for these deliberate secondary fires were between 19.00 and 20.00 hours.
- There was also some correlation observed between the numbers of such fires, the times of school holidays and the run up to bonfire night.
- There was a correlation between social and economic factors and arson. For example, areas with a high number of deliberate fires also appeared to those that were the most deprived in the area according to Indices of Deprivation Index (DETR, 2000).

As a result of these findings, a number of conclusions and recommendations were made. Key recommendations were:

- A software system capable of recording and retrieving detailed information on all types of fires and that could be linked to a GIS system should be implemented as soon as possible.

- Research should continue to be conducted on the factors that affect the occurrence and frequency of fires.
- Partnership approaches should be developed to tackle arson

The study also recommended that responses to the arson problem should primarily be based upon;

- **The removal of opportunity/ target removal:** For example the removal of rubbish in key areas and the removal of abandoned vehicles.
- **Access control / deterrent:** Including the removal of access to cars and derelict premises.
- **Educating potential victims and offenders:** Running structured education programmes within schools for pupils at risk, educating businesses about the potential dangers of leaving rubbish around the premises and working with potential juvenile offenders

The Scoping study was a significant document as it undertook initial scanning and analysis of the problems faced by the brigade and it was also pivotal in developing a strategy to reduce arson. The Scoping study was used to help inform the original bid made to ODPM for funding. In the bid the case was made to develop the recommendations forwarded in the Scoping study. The bid placed emphasis on the problems faced in the south east of the county and the strategies that would be implemented to tackle these problems and requested funding of £64,650 over three years. This primarily included funds for a project manager (at £18,000 in year one, £18,550 in year two and £19,100 in year three) and £3,000 for the lease of a vehicle. Funding was approved for this amount.

## PROJECT STRUCTURE AND ACTIVITY

The ACF funded project officially began in April 2001.<sup>29</sup> The project was helped as the post of Arson Reduction Coordinator was given to the author of the Scoping study and therefore somebody with vast experience of the local area and working within the fire service. Despite this, actually implementing strategies to reduce arson was dependent upon developing partnerships and continued analysis and monitoring of data. The ARC is based at brigade HQ and takes care of all of the day to running and requirements of the project. The key duties of the ARC involved:

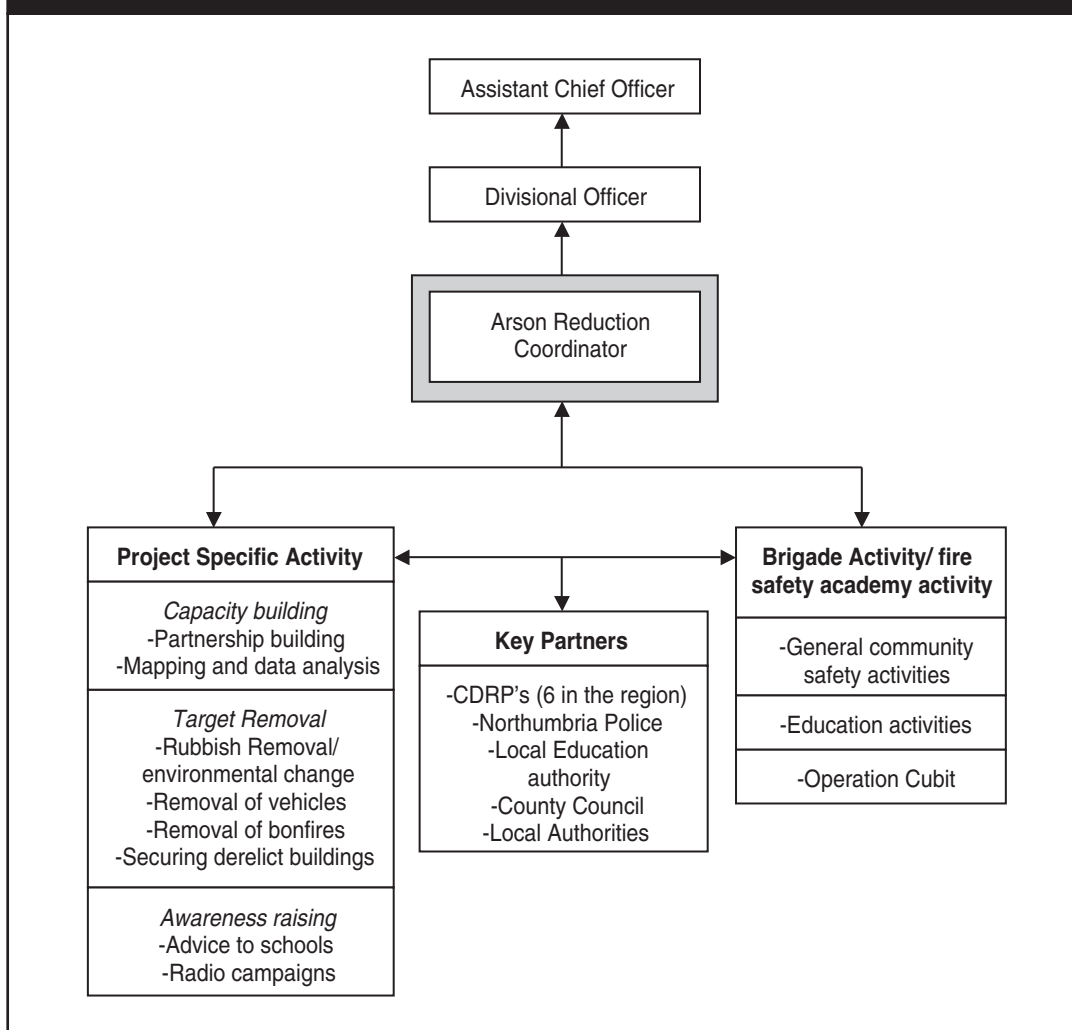
- Developing strategies to reduce incidents of arson
- Running educational / awareness raising initiatives to inform the public/ key groups about the risks of arson
- Liaising with key partners to achieve these aims
- Monitoring and evaluating arson incidents across the Northumberland region. The ARC undertakes some internal evaluation by producing quarterly statistics to monitor arson trends, and uses the regional information sharing system run by the Government Office for the North East.

The full project structure is outlined in figure B5.1- below.

<sup>29</sup> The project ran to April 2004, after which it was hoped to develop an Arson Task Force across the area.



**Figure B5.1: Northumberland Arson Reduction Coordinator: Project structure and activity**



The organisational structure of the project was based upon a chain of command through the brigade. There was no formal steering group for the project, though the work of the ARC was monitored by the Divisional Officer and the Assistant Chief Officer (the ACO takes an interest in all such initiatives across the brigade). The ARC worked closely with and was line managed by the DO. This included regular updates on project activity and monitoring statistics that were regularly discussed in meetings between the two. The ACO of the brigade also had an interest in the project, though his interest in the day-to-day problems associated with the project was more limited.

As is also outlined in figure B5.1, the post of ARC has helped to facilitate a variety of project activity. This has been based on a number of recommendations made in the Arson Scoping study, though in some circumstances has been limited by implementation problems (as discussed below). In addition to the NPI funded project activity there has also been activity conducted through the fire safety academy. This has a close relationship to project activity (and involves the ARC) though it is not directly funded through the NPI. The key activities of the project are outlined below:

### ***Capacity building***

Capacity building primarily involves undertaking activities to develop partnerships with other agencies and to conduct analysis to be used to inform the project. A good

deal of partnership working was initiated since the inception of both the scoping study and the development of the project. Though some partnership work had been conducted before the start of the project through the scoping study some problems were still being encountered when working with partners (these are discussed below)

As a result of such problems, the project manager suggested that when working with partners a 'sounding out' process would be conducted. Here he would try to identify people within different agencies who would have sufficient influence to be able to affect decisions and would thus be able to help ensure that strategies would be implemented successfully.

### ***Removal of fuel***

This initiative began in June 2002 and focused upon the Ashington area of Northumberland. This area suffers from high levels of deprivation, crime and disorder and poor health standards due to demise of the local coal mining industry. The scoping study identified environmental problems such as refuse, derelict buildings and abandoned vehicles as a problem within a four square mile area of East Ashington. It was therefore decided that improvements in the environment would have a positive effect on the quality of life for residents in the area, and the LGA Pathfinder Project was introduced. The Pathfinder project was run in partnership with the council and local authority and together interventions to reduce environmental problems were developed.

One problem highlighted was the collection of recycling bins. The bins would not be collected if it could be seen that they contained materials that were not recyclable and the uncollected bins would become a potential target for fire setters. It was therefore decided that the normal refuse collection should take place after the recycling collection, so that any bins that had not been taken by the recycling team could be taken by the refuse collectors (this is done by the refuse and environmental cleansing department at the county council). Derelict houses were addressed by putting the cleansing budget in the hands of one council department so that they could be cleared more quickly. The "Officers Group"<sup>30</sup> also trawls the area three times a week to look for potential hazards and reports and acts on them. This is clearly labour intensive and hence this proactive approach has not been replicated elsewhere (though it was hoped to extend this to Blyth and Cramlington). In other areas, hazards are reported on a more *ad lib* basis and acted upon.

### ***Removal of vehicles***

This was a county-wide strategy that began in December 2001. Previously 24-hour notices were placed on vehicles with the vehicle remaining *in situ* and at risk of being burnt out. The aim of the strategy was to remove vehicles more quickly to avoid this problem. However, the local authority was unwilling to do so as it did not wish to contravene existing legislation (The Refuse Disposal Amenity Act- 1978)<sup>31</sup>. A working group was established to address this problem and they used alternative legislation to ensure swifter removal of vehicles -notably the Highways Act 1980 (sec 149.2) and the Road Traffic Regulations Act 1984 (sec 99-101). The Highways Act (1980) allows the removal of vehicles on the highway that may be a nuisance or danger without notifying

<sup>30</sup> The officers group includes members of the fire and rescue service, district council housing services, community safety officers, refuse manager, community wardens, highways managers and the police.

<sup>31</sup> This states that it is the responsibility of the local authority to remove abandoned vehicles, though a notice period must be served and can be challenged by the owner.

the owner or obtaining a removal or disposal order from a magistrates court. The Road Traffic Regulations Act (1984) makes provision for the disposal and safe custody of such vehicles by the local authority. It is now possible to justify the immediate removal of such vehicles.<sup>32</sup>

Vehicles are removed after considering all risks associated with the vehicle and its location (this information is recorded on a proforma). However, problems have also been identified with the removal contractors. They were sustained by claiming money from insurance companies when cars were abandoned. However, in cases where the car had no registered keeper and therefore no insurance they could not claim any money and would not remove them. There was also anecdotal evidence that the original removal contractors (namely scrap dealers) were selling such vehicles as pool vehicles and, thus, they eventually would be abandoned again. This has been addressed by tendering the removal of vehicles to the police (this should be in place from February 2004).

### ***Securing Derelict Buildings.***

This was a county-wide strategy that began in June 2001 in partnership with the local authority. There were no protocols in place for the securing of derelict buildings when the project commenced and there was a particular problem with deliberate fire setting in Blyth Valley. A member of staff in Blyth was keen to improve matters and developed a protocol. However, the staff member left and progress was hindered for a number of months. The project offers advice to local authorities and landlords on securing buildings. However, particular problems have emerged, such as the case of a proprietor who wished to develop a derelict house that was a listed building. He was asked to secure the building on a number of occasions but he never did so as it was in his best interests for the building to be burnt down (as he would then be able to develop it). Progress has been slow with this strategy though and a number of problems have been encountered.

### ***Education and awareness raising***

Northumberland have approached educational issues in a number of ways. Many of these strategies are currently being implemented by the Fire Safety Academy, though the project manager was responsible for a radio campaign conducted in October and November of 2002. This included working with Durham and Cleveland brigades to develop three different adverts to be played on four commercial radio stations. These adverts tied in to the bonfire initiative that aimed to reduce deliberate bonfire setting prior to 5th November. The target audience for the adverts were teenagers.

### ***Other activity***

A variety of other activity has taken place in Northumbria. For example there has been widespread implementation of operation Cubit to remove vehicles and the fire academy has implemented a number of youth based projects that could potentially impact upon the project evaluation. For example, a number of Youth Services are provided following funding from HM Treasury. A Fireworks Youth Achievement Course is run on a ten-week, day release basis aimed at those at risk of offending, truancy, exclusion or substance abuse. The already established Firesetter intervention is also run under this service, as well as an Illegal Driving Programme, a Restorative

<sup>32</sup> After 9th April 2002 the Removal and Disposal of Vehicles Amendment Act (England) allowed vehicles that posed a risk to the public be removed without serving a 24 hour notice.

Justice Programme, Child Safety workshops, and interactive schools presentations. These presentations are given on issues such as hoax calls and courtroom scenarios. Youth Services also provide Fire Awareness Days, Young Fire Wardens Course and Careers Guidance.

The assistant educationalist and educationalist employed within the Academy have specifically targeted schools that are deemed to be at risk through statistical research. Of the 14 high schools and 52 middle schools in the area, they plan to make input into 7 high schools and 20-25 middle schools. The key input here will include delivery of an 'anti-arson' message through workshops run under the national curriculum citizenship programme with 12 and 13 year olds. By December 2003, the anti arson workshops/ FIRE works courses were running across the county.

## PROBLEMS EXPERIENCED

The Northumbria Arson Reduction Coordinator helped to facilitate a number of arson reduction strategies across the area. The project benefited from having an experienced project manager, though some problems were encountered. These primarily related to:

- **Partners not viewing arson as a priority:** The project was dependent upon partnership working. However, a number of potential partners did not view arson as a key priority.
- **Resource and Time Limitations:** When agencies do take an interest in the reduction of arson, limitations on resources and time often make it difficult to play a fully active role in the project.
- **Over bureaucratic agencies:** Occasionally, over bureaucratic structures in local authorities made it difficult to quickly respond to changes required in strategies such as vehicle recovery schemes.
- **Funding removals:** Where vehicles were not insured and the contractor could not claim for the value of the vehicle they would not be removed – this has been rectified by tendering the removal of vehicles to the police.
- **Reselling Vehicles:** Anecdotal evidence suggested that vehicles may have been resold back into the community – this has been rectified by tendering the removal of vehicles to the police.
- **Ensuring that processes worked properly:** As the project was dependent upon partnership working, it was also dependent upon cooperation between partners to ensure that strategies such as rubbish or vehicle removals were implemented and running properly. Occasionally partners did not perform as might be expected. Therefore, future projects need to ensure that partners are both clear about what their role is and that they are reliable.

## SUMMARY/ KEY PRACTICE ISSUES

The Northumbria project represented a concerted attempt to tackle a variety of arson related issues in one area. The project began in April 2001 and its key elements are outlined below.

### ***Scanning and analysis***

In the Northumbria project initial 'scanning' conducted in the scoping study allowed for the identification of 'hotspots' and patterns of arson. This study was conducted over the period of one year and it appears that such in-depth study ensured that both the scanning and analysis conducted for the project was rigorous.

The initial scanning of FDR1 and FDR3 fires allowed the Northumbria brigade to identify the actual proportion of fires that were deliberate and how the brigade compared to other brigade areas. Further analysis allowed for the identification of targets for arson and localised problems across the county. For example, motor vehicles and rubbish fires were highlighted as particular problems, fires were concentrated in the south-east corner of the county and there appeared to be a correlation between deliberate fire setting and deprivation.

### ***Responses to problems***

Responses were clearly informed by earlier scanning and analysis, though these were slightly limited due to resource and implementation problems. The project was particularly reliant upon partnership working to implement mechanisms to reduce arson and responses were focused upon specific geographical areas.

The development of partnership working was helped as the ARC had written the scoping study and already had established relationships with key partners. This element was also helped as the ARC had a number of years service in the brigade and had knowledge of 'how to get things done'. The key responses focused upon rubbish removal, vehicle removal and securing derelict buildings and all faced specific implementation problems. For example;

- The rubbish removal scheme was fairly intensive and thus, focused upon one specific area. This was run in partnership with the local authority and initially it was identified that if non-recyclable waste were collected before recyclable waste then often rubbish would be left on the streets and became a potential fire risk (as often rubbish put in recycling bins was left behind). Procedures were altered to make sure that recycling bins were collected first and that all rubbish would be cleared from the streets.
- The vehicle removal scheme faced initial problems as the local authorities were not able to quickly remove abandoned vehicles and thus they became an arson risk. This was remedied by referring to legislation that enabled the swift removal of vehicles, namely the Highways Act 1980 and the Road Traffic Regulations Act 1984. Other problems were encountered with the payment of removal contractors and the resale of abandoned vehicles from scrap yards. This is to be addressed by tendering removal and disposal of vehicles to the police.
- Securing of derelict buildings has proved to be problematic to implement as it has been suggested that owners can be reluctant to secure buildings. It has also been suggested that it can be in the best interest of owners if buildings are burnt down.

Another large component of the project was an advertising campaign run on local commercial radio stations. This was part of a campaign to reduce deliberate bonfires in October and early November 2002 and with the help of the local radio stations proved relatively easy to implement.

***Assessment of responses***

The responses to these problems are assessed through routine monitoring of fire statistics collated by the ARC. These are reported back to the divisional officer and to ODPM through quarterly reports. No local independent evaluation of the project has taken place, though the quarterly reports highlight general patterns of arson across the county. Targets have been set for a reduction of 5% in vehicle fires, refuse fires and derelict buildings fires over each year and an eventual fall of 30% by 2009 (in line with national targets). Indications from the project are that these targets are being met. An assessment of the fire statistics relating to this project is given in Annex C.

# Case Study 6:

## Shropshire Fire Investigation Training

### INTRODUCTION TO THE PROJECT

This project was based in Shropshire, a predominately rural area with a total population of just over 283,000. The county borders Wales to the west and is part of the West Mercia policing area (along with Hereford and Worcester brigade). The largest centre of population is Shrewsbury and Atcham (pop 95,850) and there is a higher than average elderly population in the county. Shropshire is a relatively prosperous area, with most areas falling within middle quartiles in terms of deprivation. There are no significant pockets of deprivation in the area. Whilst there was a 30% increase in recorded crime between 2001 and 2002, there was only a 3% increase between 2002 and 2003. Only 8.9% of residents fell victim to crime in 2002 with this increasing to just 9.1% in 2003. This is relatively low in comparison to most area crime rates. A total of 20% of households were affected by crime in 2002 with this reducing to just 17% by 2003.

The bid for ACF funding was made after it was ascertained that in West Mercia and, in particular, Shropshire, there are a high proportion of deliberately started fires. This led to the application for ACF funding to establish the 'Extinguishing Arson Project'<sup>33</sup> (EAP) under the auspice of the 'West Mercia Local Arson Task Force' from which the Fire Investigation Training element (and focus of this case study) was born. Under the EAP a number of task groups were formed to address thematic arson problems. These were based on analysis of arson problems across brigade areas and included groups that were formed to tackle school fires, arson on farm premises, business premises, abandoned vehicles and hoax calls to the brigade (which are a continual drain on resources). A large proportion of the project was concerned with awareness-raising through all forms of media, but there was also a focus on working with groups such as Youth Offending Teams and Young Fire-setters.

During the course of the Extinguishing Arson Project it was recognised that a number of fires that are deliberately ignited are recorded as 'unknown' and that further investigation into fires recorded as 'unknown' is not conducted. This has obvious implications for both the brigade and the future pattern of arson within the area. If fires are recorded as 'unknown' and investigation is not conducted, the potential for apprehending offenders, whom may continue to set fire to buildings/ cars, is lost. Therefore, the focus of the Fire Investigation Training project was to reduce the number of fires where the cause was 'unknown' and increase the number of investigations into fires recorded as 'deliberates'.

### PROJECT BACKGROUND

Whilst Hereford and Worcester tend to have more fires per annum (approximately 2000), there are a higher proportion of deliberate primary fires (over 50%) in Shropshire. Moreover, the most problematic areas for deliberate fires are concentrated in towns such as Telford, Wellington and Shrewsbury. One of the major problems identified for tackling arson, is establishing the cause of the fire in the first place. Often

<sup>33</sup> The Extinguishing Arson Project was another ODPM funded NPI project. This received £50,000 of funding over three years from April 2001.

fire officers do not have the skills to recognise when a fire has been started deliberately and will record the cause as 'unknown'. This has an obvious impact upon detection rates for arson as without a crime there will be no police investigation and offenders will not be apprehended.

Several bids were originally made for funding to tackle the number of deliberate fires in the brigade under the auspice of the "Extinguishing Arson Project". Amongst these was a bid for £18,000 for practical training of fire investigators throughout the two brigades.<sup>34</sup> The theory was that the training would allow investigators to more readily identify incidents of arson, and therefore enable an increase in detections of arson incidents.

## PROJECT STRUCTURE AND ACTIVITY

Between April and June 2002, 12 fire officers from both brigades and 6 scenes of crime officers were trained by a private provider (Gardiner Associates) at a cost of £950 per trainee. This provider has also been used by a number of other brigades for the same purpose. The course lasted two weeks and involved more practical elements than traditional fire service training such as the examination of fire scenes and courtroom training. The training providers also included personnel with a range of experience including forensic experts, experienced fire and police officers, and trainers from America. Since June 2002, Shropshire and Hereford and Worcester fire brigades have sent 26 further fire officers on this course, covering all personnel who would benefit from the in depth training.

The management of the Fire Investigation Training fell under the same auspice of the wider Extinguishing Arson Project. Thus, overall responsibility fell to the Chief Fire Officer, although effective day-to-day management was in the hands of a full-time project co-ordinator who was an Assistant Divisional Officer.

The expected outcome from this intervention would be a decrease in the number of incidents recorded as cause unknown, and thus an increase in recoded arsons and detections. In the longer term, arsons would be expected to decrease. The publicity that would accompany the apprehension of offenders as a result of this training would also be expected to affect a decrease in arson. However, these outcomes are difficult to measure over the period of this evaluation, but a variety of more qualitative benefits were reported. These have included:

- The training has encouraged police scenes of crime officers to be more patient in waiting for the arrival of fire investigators before commencing scene examinations. This has been observed in practice and has enabled the police SOCO and fire investigators to work together.
- The training has also encouraged scene examiners to be more methodical in carrying out the examination.
- Working practices between the police and the fire service have improved at fire investigations, as they have come to know scenes of crime staff and their working practices, and have been able to share resources such as photographers.

<sup>34</sup> The bid for fire investigation training was actually rejected as there had been an under-spend on the EAP. The £22,000 under-spend was therefore used for the training programme.



- It is reported that the Fire Service College are now employing similar techniques to Gardiner Associates by employing experts to deliver training and so on, although Gardiner are still regarded as superior in this respect.

## **PROBLEMS EXPERIENCED**

The Fire Investigation Training differed from most of the other NPI projects in that it was based around training of officers rather than the implementation of a number of strategies to directly reduce arson (such as rubbish removal or vehicle removal). As such no problems were reported besides the cost of the training course.

## **SUMMARY/ KEY PRACTICE ISSUES**

The fire investigation training project was born out of a larger 'Extinguishing Arson Project' that is also funded by ODPM. The project was based around providing training for fire officers and police scenes of crime officers on fire investigation. The key aims are to reduce the number of fires where the cause is recorded as 'unknown' and to increase detections of arson. The key elements of the project are summarised below.

### ***Scanning and analysis***

Some scanning of fire data had recognised that in a significant proportion the cause is recorded as 'unknown'. This presents a particular problem with regard to arson as if the cause of a fire is recorded as unknown then the fire will not be investigated. This has a 'knock on' effect as potential offenders may not be apprehended and thus continue to offend.

### ***Response***

The response to the problem was to train a number of fire officers and police scenes of crime officers on fire investigation. The training was provided by a private company with a vast experience in the area, and covered areas of investigation from the scene to the courtroom. A total of 38 fire officers 6 scenes of crime officers were trained. The only key problem noted with the response has been the cost. The fee for each trainee is £950, which means that it is costly to train any number of officers.

### ***Assessment***

Qualitative assessment suggests that the training has had some beneficial results. First, it has been reported that scenes of crime officers who attended the course are now more likely to wait for the arrival of fire investigators before commencing examinations. Second, there has been a noticeable improvement in the methodology employed by fire investigators at scenes. Third, working practices between the police and fire service have improved, and finally, the fire service college are now replicating similar training programmes. A quantitative assessment of the impact of the project is given in Annex C.

# Case Study 7: South Tyneside Arson Task Force – Problem-Solving Model

## INTRODUCTION TO THE PROJECT

The project was based in South Tyneside and implemented by Tyne and Wear Metropolitan Fire Brigade. The brigade services the whole of the Tyne and Wear Metropolitan County. This area includes the cities of Newcastle and Sunderland and has a population of over 1,075,000 people. The South Tyneside Arson Task Force was established to concentrate on two Metropolitan Districts in the Tyne and Wear County- Gateshead on the south bank of the river Tyne and South Tyneside, which lies in-between Newcastle and Sunderland. South Tyneside has a population of over 152,000, and Gateshead over 191,000. Like many metropolitan areas, Tyneside suffered economic hardship in the late 20th century with the decline of its traditional industries (particularly shipbuilding, coal mining and shipping transportation). As a consequence both the Gateshead and South Tyneside districts have a number of its districts ranked within the top quartile of most socially deprived areas in England and Wales. In Gateshead, 11 of its 17 wards are ranked in the top quartile of most deprived wards as are 17 out of 20 in South Tyneside. South Tyneside and Gateshead fall within the Northumbria Police Constabulary area, which in 2002/03 had a recorded crime rate of 120 per thousand population, a rise from the 2001/02 recorded crime rate of 98 per thousand population. The BCS (2002/03) estimates that 19% of all households had experienced at least one crime (the 2001/03 estimate was 20%).

The South Tyneside ATF was born out of the recognition of the continuing arson problem across the area but there was also a desire to replicate the work done in the demonstration ATF run previously in the West End of Newcastle and in Sunderland. In 2001 a bid was produced by the Deputy Chief Fire Officer for Tyne and Wear Metropolitan Fire Brigade for funding to establish an Arson Task Force within the South Tyneside area, covering South Tyneside and Gateshead Metropolitan Districts. The aim of this new Task Force was to:

- Implement a variety of interventions to improve awareness of the dangers and consequences of arson
- Reduce incidents of arson by working in partnership with other agencies
- Co-ordinate a multi-agency response to the problems associated with arson within the South Tyne area.

## PROJECT BACKGROUND

There was a recognition in Tyne and Wear that the ATF projects in Newcastle and Sunderland had reduced incidents of arson in their areas, and it was clear from analysis of fire data that similar initiatives may be beneficial in the South Tyneside and Gateshead Metropolitan District Areas. In April 2001 a bid was submitted to the ACF for funding to establish an ATF in the South Tyneside and Gateshead area. A total of £60,000 was awarded, and in October 2001, following a recruitment campaign in Northumbria Police Constabulary, a Detective Constable was seconded to the project. Shortly afterwards in November 2001 the Fire Brigade secondee also took up post.

Since the beginning of April 2002, these two officers have been supported by a Research and Liaison Officer (who had previously worked at the Sunderland ATF). A further successful bid for £60,000 in 2002 allowed continued implementation of the Problem Solving Model. The team are located in the Fire Brigade Community Safety Centre - Station Kilo, which serves the South Tyneside and Gateshead Authority areas. The project is overseen by a Divisional Officer from the Fire Brigade, who also oversees the other two ATF's in the area (Sunderland and Newcastle).

The ATF have a clear set of aims (outlined above) though have particularly focused on small 'hotspot' areas within South Tyne, utilising problem-solving methodology (which is based around the SARA framework outlined in this report). Therefore much emphasis has been put upon analysis of problems within small geographical areas and responding to them in a clear logical fashion. This is outlined in more detail in the next section.

## PROJECT STRUCTURE AND ACTIVITY

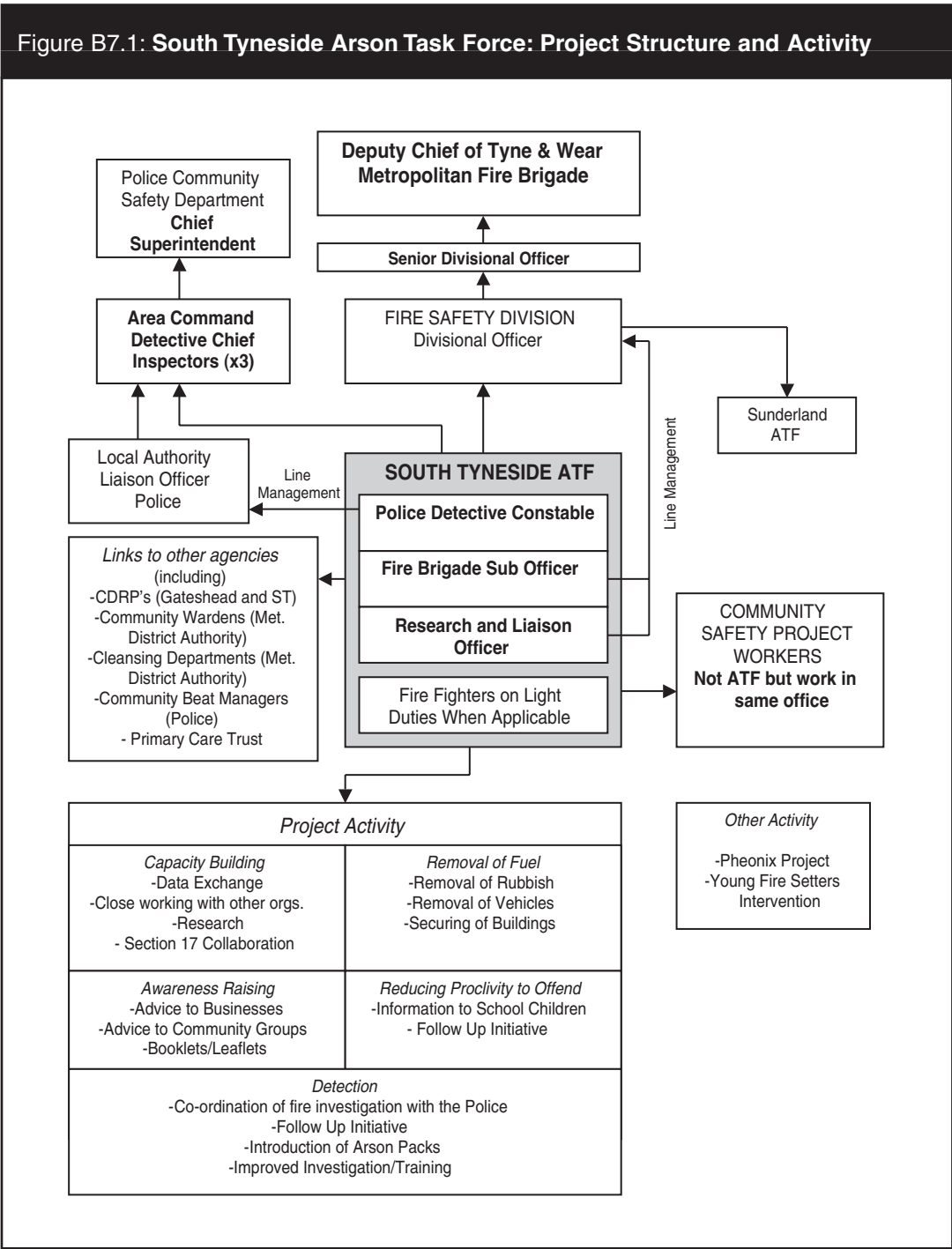
The structure of the ATF, and its associated activity is detailed in Figure B7.1 The core ATF members, the Police Detective Constable and the Fire Brigade Sub Officer were funded through their relevant agencies. Both of these officers were seconded to the project after the establishment of the ATF in late 2001. The Research Liaison Officer was employed on the project in April 2002, funded by ACF monies. The successful candidate for the role had previously worked as the RLO for the Sunderland ATF.

Overall control for the project was with the Divisional Officer in the Fire Safety Division of the Tyne and Wear Metropolitan Fire Brigade, who reported to the Senior Divisional Officer (Fire Safety) and the Deputy Chief of the Brigade. The Divisional Officer was also Line Manager for the RLO and the ATF Sub Officer. The seconded Police Detective Constable was line managed by the Detective Inspector at South Shields Area Command, and reported to the three Area Command Detective Chief Inspectors<sup>35</sup>, the Chief Superintendent to the Community Safety Project (who ultimately reported to the Assistant Chief Constable).

The ATF were conscious that the project was time limited (finishing in April 2004) and viewed their role to be an "idea's factory", establishing protocols and good practice, and implementing sustainable change within the area, ensuring a clear exit strategy so work continued after the cessation of the ATF in April 2004.

The ATF ran a number of strategies and interventions across the South Tyneside and Gateshead area, focusing on all types of arson (although vehicle and refuse arson were priorities as they account for the largest percentage of all arson). The key elements of the work of the ATF are detailed below.

<sup>35</sup> The South Tyneside and Gateshead Metropolitan Districts are covered by three Police Area Commands (Gateshead East, Gateshead West and South Tyneside).



**Capacity Building**

As with most arson task forces, a substantial amount of capacity building activity took place over the course of the project. This primarily included:

- Development of partnership working:** The very nature of the Arson Task Force (based upon the Newcastle model) means that closer working between the Police and Fire Brigade, and other agencies is a central element. This helped to promote arson as a core concern amongst these agencies. The ATF also worked with the local Crime and Disorder Reduction Partnerships to highlight arson, and aided in the production of both the South Tyneside and Gateshead crime and disorder reduction strategies.

- **Development of Protocols with partners:** Initially, when a problem was identified, a strategy for dealing with the particular problem was developed by the ATF. Each of the relevant agencies would be contacted, and an agreement reached as to what should be done to target the specific area/problem. Following two targeted operations, 'Ocean Drive' and the 'Simonside Estate', this was found to be too resource intensive, and it was decided to establish a series of protocols which would be employed to reduce the negotiation for action at each problem site. Protocols relating to the securing of buildings<sup>36</sup>, the removal of refuse and the removal of abandoned vehicles have also been drawn up, and have been accepted by the authorities involved<sup>37</sup>
- **Facilitating Data exchange:** A key issue throughout the life of the project, and central to the Problem Solving Model employed, was that of data exchange, analysis and mapping. To this end a protocol was established (during the first year of the ATF) between the Police and Fire Brigade to ensure data would be shared with the ATF and between the two agencies in order to reduce arson. The establishment of a database to amalgamate these two data sets occurred soon after, and its continued improvement has been a key aim of the ATF. At present, data from the Police has to be input manually to the database held at the Fire Brigade (and the data for Gateshead has never been input), but it is hoped that the database may be improved to ensure direct downloads of information from each agency.

During the first year of the ATF, much work was done in collaborating existing data collection systems in the Fire Brigade and Police, to ensure that problems could be identified and ratified efficiently. A protocol establishing the data sharing commitment between the Police and Fire Brigade was agreed, and a database was established whereby data from both agencies could be stored and scrutinised.

It is estimated that everyday the two ATF officers spent one hour each analysing the current data to determine problem areas and predict areas that may become problems. In addition, the RLO also spent a large proportion of time analysing the data and producing GIS maps to establish hotspots. In addition, research has been conducted into Vehicle Arson by the RLO, and a report produced has been submitted to HMI and ACF, who have responded positively to the document.

### ***Removal of Fuel***

The focus of the response to arson in the Problem Solving Model was the removal of fuel, be it the removal of abandoned vehicles, the removal of refuse or the securing of buildings. The protocols established by the ATF formalised the duty of each agency in the pursuit of reducing arson through fuel removal. A number of individual schemes have been implemented, as detailed below. Co-ordinating multi-agency responses to problem on a site by site basis was found to be resource intensive and as such a series of protocols relating to fuel removal were established between the Metropolitan District Authorities, Police and Fire Brigade. The key project activity here was focused upon identifying problem areas, targeting these areas and also running separate initiatives such as the bonfire initiative. These are outlined below.

<sup>36</sup> Although the Metropolitan District Authorities have agreed to secure building belonging to them, there are still unresolved issues regarding their role in securing private properties.

<sup>37</sup> The ratification of these protocols is ongoing.

- **Identifying Problem Areas:** areas were identified through daily analysis, which meant that problem areas could be targeted on a day-to-day basis. The ATF conducted site visits to identify risk factors, implement the solutions (as per the protocols established), and continue to monitor the areas to ensure the methods employed to reduce the problem were successful. This was the central, ongoing problem-solving model in application.
- **Targeting problem areas (Woodbine Estate and Simonside initiatives):** in the initial stages of the ATF, two main areas were identified as having a high number of arson incidents (Woodbine Estate on Ocean Road and the Simonside Estate). These two areas were visited by the ATF, who identified problems with fuel such as abandoned vehicles, refuse and insecure derelict buildings. The ATF then approached other agencies to negotiate the clear up of these areas. In addition to this, the ATF spoke to all restaurant proprietors on Ocean Road, where refuse had not been contained to a suitable extent, and informed them of the refuse removal schemes available (see also Awareness Raising). On the Simonside estate, further analysis had identified the problem with Juvenile disorder (with fire crews having stones thrown at them when in attendance). Additional resources were therefore devoted by the Police to patrol the area to identify and apprehend those responsible.
- **Bonfire Initiative:** analysis of previous years figures on refuse arson highlighted the increase of 'bonfire' fires in late October to early November. To reduce this the ATF proposed a multi-agency response to unauthorised bonfires between the 29th October and 6th November 2002. The Police, ATF and South Tyneside Local Authority, agreed that any unauthorised bonfire (discovered by any agency or reported by the public) would be reported to, and removed within 24 hours, by the council. This protocol was re-implemented during early November 2003, additionally the ATF followed the appliances to all bonfire fires during the night of November 5th, as part of the 'follow-up initiative' (see below).

### ***Awareness Raising***

Raising the awareness of the sources, dangers and consequences of arson are seen by the ATF as a priority. During their area targeting interventions, the proprietors of every restaurant, in a target area, were visited by the ATF and the problem with refuse and its use as fuel for arson was highlighted. By raising the awareness of those responsible for fuel provision (albeit accidental), explaining the consequences and detailing local schemes that could help, the ATF hoped the removal of fuel would become a sustainable change in the behaviour of those responsible. There were, however also other activities to raise awareness. These included:

- **Shopwatch Scheme in Jarrow:** During the project, the ATF undertook the establishment of a Shopwatch Scheme in Jarrow. By making the business owners in the area aware of the risks to their property from refuse, its burning, and highlighting schemes which could be employed to reduce the risk, it was hoped that the area would 'self police' and report businesses which failed in their duty to contain their refuse.
- **Leafleting Businesses and Residential Premises:** Two leaflets were designed, printed and distributed by the ATF, one focusing on the threat to businesses (included in the information delivered in the Shopwatch Scheme) and one detailing the threat to residential properties, both were delivered in areas

identified by analysis as having problems. The leaflets were photocopied by the ATF as and when required.

- **Poster Campaign:** A number of posters were produced and distributed to Schools, Libraries and Doctors Surgeries in the local area, detailing arson, its sources and consequences and agencies to contact. It is not know exactly how many of these posters were produced.
- **Raising awareness at local events:** The ATF attended a number of community events in the area, although this is time consuming and as such, the ATF were unable to give a presence as often as they were requested. The larger events, such as the Sunderland Air Show permit the ATF to address a wide-ranging audience and highlight their work and the risks of arson. In addition to attendance at events, the ATF had a close relationship with the local press, and frequently appeared in articles relating to arson and fire safety.

### ***Reducing Proclivity to Offend***

The involvement of the ATF with those who have a proclivity to offend was limited, but they have liased with the Forestry Commission and the Community Fire Safety Department and produced a presentation, which was delivered to a local school. The presentation was a direct result of analysis that had revealed a spate of malicious fire setting by youths, and related juvenile disorder, within the Hookergate School and Chopwell Woods area. The presentation has been delivered to several schools and has been well received by the pupils and teachers. This area is also focused upon in the 'Identification of Problem Areas Initiative', with the ATF monitoring the area closely.

### ***Detection***

A key aim of the ATF was to increase detection of arson offences in the locality. This included developing arson packages for officers attending arson incidents, encouraging officers to attend the scene with the fire appliance team and ATF officers providing help to the police on the investigation. These are outlined below:

- **Arson Packages for officers attending scenes of arson:** in 1999 (prior to the inception of the ATF), a local area (Birtley) was identified as having an increased number of arson incidents. A team of detectives were devoted to re-investigating the arson incidents, but soon discovered that the evidence gathered by the first officers on the scene was lacking. Therefore, a package was developed by the Police providing step-by-step guidance for attending officers on what details of the incident to take and what to look for in terms of suspects. This was introduced in the Birtley area in March 2000 and continued to be used until August 2000. Following the establishment of the ATF in October 2001, the Birtley area once again became a problem area and the Gateshead West Command area requested the reintroduction of the arson packages. The ATF Police Detective Constable (previously involved with the arson package development) updated the packages, and they were reintroduced in December 2001 (on a trial basis until March 2002 – although officers in the area continue to use the packages). It was hoped, once the trail had ended, that funding could be secured to introduce the packages across the whole area, however this has not been secured (funding required is £1,000 to produce 2,000 copies, sufficient for 3 years of investigations).
- **Follow-Up Initiative investigating arson:** reports from attending fire crews suggested that receipt of intelligence from the public at the scene of the fire,

would often include the details of the person(s) responsible. However, the police would often fail to arrest a suspect, as they would attend the incident after the fire service had dealt with the scene and when the perpetrators would have left.<sup>38</sup> The ATF discussed this issue, and it was decided that the two ATF officers should follow the appliance to suspected arsons to conduct immediate investigations. In one incident (where a LPG cylinder had been placed into a fire, and the youths had encouraged children younger than themselves to stand close to the fire and watch) the ATF Police Detective Constable was able to arrest those involved with the fire setting for arson and intent to endanger life after they had been identified by the public.

- **Providing advice on fire Investigation:** in addition to the follow-up initiative, the ATF officers regularly attended incidents, offered advice and intelligence to the fire and police officers in attendance, and aided in further investigations (such as aiding the police in the identification of fire sources). From early 2003 the ATF estimate they have attended and advised at over 200 incidents, some requiring several days investigation and support.

In addition to these interventions, the ATF helped in the delivery of the Fire Brigade Crew Command Courses, providing a session on arson, and they have facilitated the installation of 'Silent Witness' cameras on the appliances. These cameras are mounted on the appliances, and can be hand held to scan the crowds. The footage can be viewed subsequently in investigations and may reveal 'familiar faces' of suspects.

### ***Other Activity***

The Tyne and Wear Metropolitan Fire Brigade run a Young Fire Setters Intervention Scheme (the ATF Sub Officer and ATF RLO are both trained advisors and the ATF refer juveniles to the scheme) and the Phoenix Project, a 12-day residential scheme for youths at risk of fire setting.

## **PROBLEMS ENCOUNTERED**

As with the other projects, the South Tyneside Arson Task Force experienced some difficulties in establishing and initiating their plans, these are outlined below;

- **Initial Lack of Equipment:** the officers were employed before the offices were equipped, this led to several weeks of inactivity and frustration for the officers, who had to organise their office equipment before they could take forward the work of the ATF.
- **Large Geographical Coverage:** the large area covered by the ATF meant that they could not be as operational as they initially anticipated, leading to an initial focus on establishing protocols and developing data sharing.
- **Perception of the ATF:** officers have experienced some negativity from their colleagues in both the fire brigade and the police, with being in the ATF seen as being an easy role and not really the responsibility of either agency.
- **Funding arrangements:** bid processes and delays in confirmation of funds meant that the RLO has continued in her post without knowing whether the post would be receive funding for subsequent years.

<sup>38</sup> Investigation of Arson remains the remit of the Police and not the Fire Brigade.



- **Lack of Resources:** the ATF had hoped to develop and deliver a training package in fire investigation, but like the Arson Packages, this has been suspended due to lack of resources.

## **SUMMARY/ KEY PRACTICE ISSUES**

The South Tyneside Arson Task Force is partly based upon a replication of similar successful projects in the North East. The project aimed to implement a variety of interventions to raise awareness of arson and to reduce arson. The project is based upon developing a 'problem solving' approach to arson in local areas. The project began after funding was received in October 2001 and is summarised below.

### ***Scanning/ analysis***

Initial scanning of data was limited, though there was a recognition that there were particular hotspots for arson within South Tyneside that were generated by factors such as abandoned vehicles and refuse. Within the early stages of the project, emphasis was therefore placed upon analysis of local data. This was facilitated as protocols between the police and fire brigade for data exchange were established. This data analysis allowed the project team to identify particular areas where problems existed and to develop responses to these problems.

### ***Response***

Responses to the identified problems varied. Like many ATF projects there was a holistic response with many interventions implemented. The South Tyneside project was no exception and the responses were carefully targeted to the hotspot areas (particularly the Woodbine and Simonside estates). Within these areas interventions included refuse removal, vehicle removal and the securing of derelict buildings. There were also one-off initiatives aimed at refuse removal (Bonfire initiative) and awareness raising (Jarrow shopwatch scheme), though there were also area wide initiatives aimed at raising awareness of arson issues. These included leafleting businesses and poster campaigns. In addition to this, the project also attempted to increase detections of arson. This focused upon arson the development of arson packages in Birtley, and attending and investigating arson incidents in an attempt to catch the perpetrators.

### ***Assessment***

The ATF have implemented a number of interventions to try and reduce arson across the South Tyneside are. These are being evaluated locally by the research unit at Northumbria University. A full quantitative assessment of the impact of these interventions is given in Annex C.

## Case Study 8: Swansea Vehicle Arson Reduction Initiative

### INTRODUCTION TO THE PROJECT

The project was based in Swansea, a medium sized city in South Wales. The city is located in Mid and West Wales Fire Brigade area (and South Wales Police Area), and has a resident population of 223,301, nearly 8% of the total population of Wales.

In terms of social deprivation, Swansea falls in the centre of Welsh Local Authorities, (14th out of 22), and has considerable variation in deprivation, with some of the most and some of the least deprived electoral divisions in Wales. For example, Townhill in Swansea is the most deprived electoral division in the city, and a further eight are in the top quartile. Contrastingly, there are also 11 electoral divisions in the least deprived quartile.

Compared to the rest of Wales, the area experiences high crime rates. The South Wales Police Force area, including Cardiff, accounted for 49% of the total recorded crime in Wales during 2002/03 experiencing 143,372 recorded crimes. This was an increase of 23% on the previous year (116,708 crimes accounting for 48% of the total recorded crime in Wales). It had the highest crime rate in Wales, with 120 recorded crimes per thousand population in 2002/03 (94 in 2001/02). The BCS indicated that only 15% of households had suffered one or more crimes over 2002/03 compared to 21% in 2001/02.

The ACF funded project in Swansea was based on a combined bid, from the three Welsh Fire Brigades (Mid and West Wales, North Wales and South Wales) made in 2001/02. The bid was accepted by the ACF, and a total of £108,000 was awarded. This funding was split between the three brigades to continue (or in the case of North Wales establish) Vehicle Arson Reduction Initiatives (VARI's).

### PROJECT BACKGROUND

Swansea (with an existing VARI established during 2000) was awarded £30,000 to implement interventions to reduce vehicle arson. The existing VARI had included representatives from Neath Port Talbot Local Authority, but subsequent to the funding being made available to Swansea only, they left the VARI (funding was later made available to Neath following additional funding during 2002 and 2003).

Since April 2001 the VARI has formed the Auto-Crime subgroup of the Safer Swansea Partnership (SSP), with the local Crime and Disorder Partnership. An Assistant Divisional Officer has been dedicated by the Fire Brigade to the VARI since February 2001.

The main objectives of the VARI were to:

- Remove abandoned or stolen vehicles
- Secure popular dump and burn sites
- Raise awareness of the project and the problem of vehicle arson.

A local contractor, who removes abandoned and burnt out vehicles quickly and free of charge, was used and many sites were secured by situational prevention methods (such as the placement of boulders or barriers).

## BACKGROUND TO THE PROJECT

A request for funding was made to the ACF as it was ascertained that vehicle arson was becoming a particular problem both across Wales and within Swansea. For example:

- Across Wales the level of deliberate fires was increasing, year-on-year, with 1999/00 figures indicating that Mid and West Wales Fire Brigade attended 1,631 vehicle fires, accounting for 33% of the total number of deliberate vehicle fires attended in Wales.
- In Swansea alone the number of deliberate vehicle fires was 955 in 1999/00 (an increase of nearly 20% on the previous year) accounting for nearly 60% of the total number of deliberate vehicle fires attended in the brigade.
- Analysis had shown that the percentage of burnt out vehicles in Swansea that had previously been stolen was also increasing with 17% of the total of deliberately torched vehicles having been reported as stolen in 1997/98, rising to 27% in 1999/00.

In February 2000, the Chief Fire Officer (Mid and West Wales), Head of Police (South Wales) and an Assistant Divisional Officer (Mid and West Wales – Neath Port Talbot Community Safety) met to discuss the vehicle arson escalation in the Southern Command Area. It was determined that the Fire Brigade were the most appropriate authority to gather information pertaining to vehicle arson as they attended all reported vehicle fires, with the police only in attendance in approximately 20%. A data sharing protocol was drawn up by the Police to share data, relating to vehicle arsons.

The ADO took the lead on this data collaboration, collecting and collating the data and passing it onto the Police. This involved:

- Developing a datasheet in the Southern Command Area, which was carried on all appliances and completed at each incident.
- This data capture form was then attached to the FDR1 report form, and passed to Operational Support Unit at the Fire Brigade. They were then checked by the Crime Management Unit at the Police Force to ensure that no data was missing, the Operational Support Unit would then enter the information onto a database.
- This database would be passed to the Crime Management Unit on a quarterly basis.

This process has been in use since May 2000 and has helped to establish a sound data baseline for the project.

After the data sharing protocol was put in place, it was suggested that a working group should be established to tackle vehicle arson. In May 2000, a number of interested agencies came together to discuss who should be members of a new Vehicle Arson Reduction Initiative (VARI). At this time, the VARI was to cover the areas of Neath, Port Talbot and Swansea. This involved agencies such as the Police, Fire Brigade, the two Local Authorities, and the local vehicle removal contractor (already removing

abandoned vehicles free of charge in the local area). The Fire Brigade ADO took forward the lead of this group, becoming the chair and organising the meetings.

Burnt out vehicles were noticed to be a problem through the analysis undertaken by the Police and Fire Brigade, and between May and December 2000, the ADO researched the phenomenon and drafted a protocol between the agencies, for removal of these burnt out vehicles. By January 2001, the draft protocol was circulated to the partners. Following the funding received from the ACF the VARI was taken forward and the removal of burnt out vehicles began.

## **PROJECT STRUCTURE AND ACTIVITY**

Following the successful first round bid, the original Southern Command Area VARI, was divided, primarily due to the funding only covering the Swansea area<sup>39</sup>. The Swansea VARI, was now incorporated into the Safer Swansea Partnership (SSP) as the Auto-Crime Subgroup. From April 2001 to August 2001 the Auto-Crime subgroup met on a monthly basis, discussing how funding provided from the ACF would best be spent on reducing arson. The meetings took place at the Fire Brigade Headquarters in Swansea, due to lack of partnership offices, (this was later rectified by the ACF funding).

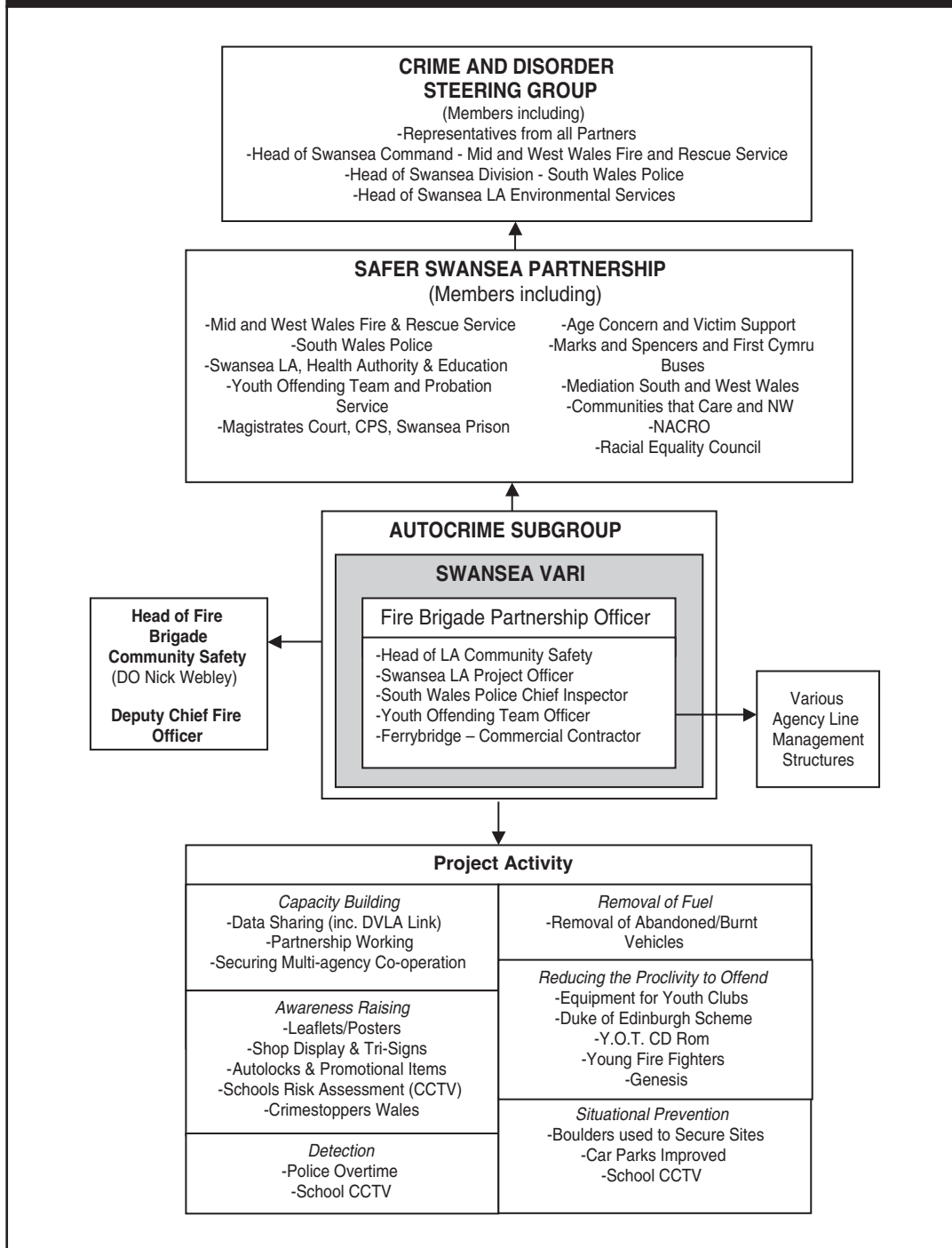
The VARI reported to the Partnership, who in turn reported to the Crime and Disorder Steering Group – which comprised of the heads of key agencies (such as Police, Fire Brigade and Environmental Health). The Fire Brigade Partnership Officer was line managed by the Head of Community Safety of the Fire Brigade, and reported to the Deputy Chief Fire Officer of Mid and West Wales Fire Brigade. This structure is outlined in figure B8.1 below.

From April 2003, the Fire Brigade Partnership Officer has concentrated on his role of increasing and overseeing partnership work. He has continued to manage the VARI, although the majority of the initial work has become mainstream considerations (i.e. vehicle removals and car park and site improvements). Two partnership posts have been created to continue and build on the work of the VARI, these are currently being filled.

The VARI focused, as the name suggests on reducing vehicle arson, using a variety of methods, such as removing fuel, securing sites and raising awareness. The reduction of theft from and of vehicles was also a key element of the initiative. Therefore, some of the interventions focused on theft rather than arson and thus on the removal of opportunity. The key elements of the project activity are discussed below.

<sup>39</sup> Following the additional funding provided in 2002 and in 2003, some funds were diverted by Mid and West Wales Fire Brigade from the Swansea VARI to initiate work in Neath Port Talbot and Carmarthen. These are not considered to form part of the Swansea VARI as such are classed as 'other activity'.

Figure B8.1: Swansea VARI: Project Structure and Activity



### **Capacity Building**

Capacity building was based around three main areas. This included, facilitating data exchange with partners, closer working with partners and developing links with Driver and Vehicle Licensing Agency. This is outlined in more detail below.

- **Facilitating data exchange:** there has been increasing use of data exchange between the partners, stemming from the original protocol established between the Police and Fire Brigade before the VARI was promoted. The very structure of the Partnership and the Auto-Crime subgroup facilitated this exchange.

- **Working with Partners:** The Partnership officers were all housed at the same Police Station, and worked side-by-side on a daily basis. As such it was felt that work was done efficiently and quickly, enabling a multi-agency approach. The fire brigade reported that the NPI funding allowed them to approach partners with problems and solutions, and then the partners would often provide additional resources and solutions. Thus the NPI funding acted as a lever to secure additional funding.
- **Establishing links to the Driver and Vehicle Licensing Agency:** Funding was diverted to the Local Authority (£2,500 of ACF matched by the Local Authority) to establish an electronic DVLA link, providing the LA with quicker access to the information relating to abandoned vehicles and speeding up the decisions regarding vehicle removal.

### ***Removal Of Fuel***

The removal of fuel focused upon three main areas. These include:

- **Burnt-Out Vehicle Removals:** the burnt out vehicle protocol was drafted before funding was received from the ACF. However, it took a further year for full agreement to be reached between all the partners and thus the intervention was not officially implemented until January 2002. Between September 2001 and December 2001, the Fire Brigade worked directly with the contractor, who had agreed to the terms in the protocol, and were faxing details of vehicles to be removed. Before the protocol, the contractor did not have a duty to remove any vehicle, and could select those vehicles that were of value, leaving those that weren't (including the burnt out vehicles). The protocol established that the Fire Brigade (deemed to be in a position to identify the majority) would notify the contractor on behalf of the Local Authority of all burnt out vehicles, the contractor then would collect the vehicle within 24 hours (this would occur for 365 days of the year). The Fire Brigade would then notify the Local Authority that the removal had occurred. Since the 21st January 2002, under this protocol, the contractor removed every deliberately torched vehicle in the Swansea LA area (over 3,000 vehicles).
- **Abandoned Vehicle Removals:** although this was established before the inception of the Auto-Crime Subgroup, the removal of abandoned vehicles continued. These were collected free of charge by the local contractor, and close contact was maintained by the partnership officer. The Highways Agency was notified of every abandoned vehicle, and they then conduct checks on the vehicle (using the DVLA link up), and notify the contractor to remove the vehicle if necessary.
- **Secured Sites – Vehicle/Refuse Removals:** as part of the securing of local sites, the areas were first cleared of existing vehicles and refuse. This occurred in eight locations between December 2000 and April 2003 (see below for further details).

### ***Awareness Raising***

A variety of activity helped to raise the focus of the project and vehicle arson in general. This activity primarily included developing a variety of materials to promote the key messages of the project. These included:

- **Vehicle Arson Reduction Leaflets:** these leaflets were designed by the Partnership Officer, and printed using ACF funds. The leaflets provided

information regarding the VARI and ways in which to reduce vehicle arson. They also provided contact details for the various removal schemes in operation and for Crime Stoppers to report deliberate fire starters. One hundred thousand were produced and 92,000 were delivered to local schools and door-to-door in the local area.

- **Unattended Vehicle Booklet:** funding of £1,500 was given to the police to design and produce a booklet detailing an initiative run by the Police in partnership with the Local Authority. These booklets detailed the process by which officers of both agencies should identify at risk vehicles and give a windscreen ticket to advise the owner on security issues.
- **'Your Luck Has Run Out' Poster:** the Fire Brigade Partnership Officer designed these posters to advertise the Police run 'trap' vehicle initiative, involving a vehicle, specially purchased and adapted by South Wales Police.
- **VARI Vehicle:** a vehicle was provided by the Fire Brigade, although time was spent trying to secure sponsorship for the vehicle from other sources. This vehicle was liveried to be highly visible when attending sites.
- **Sundry Arson Awareness Items:** £1,000 was devoted to the Police for the production of items to raise awareness of the danger of arson and its consequences to schoolchildren. Pens, rubbers, stickers, furry bugs etc. were purchased, and used by Fire and Police personnel when visiting schools during existing schools liaison visits.
- **Display at Parc Tawe Shopping Centre:** the local shopping centre provided the display area free of charge to the Partnership, and there were displays highlighting the work of the VARI and the dangers of arson. The Fire Brigade Officer was responsible for the design and production of the display information.
- **Message Trailers:** the Police requested funding from the VARI for the purchase of a 'Lock it or Lose it' message trailer. This large 'advertising' trailer was towed to and parked at prime theft sites to raise awareness of theft from and of vehicles. The trailer has several interchangeable bi-lingual message panels. The VARI provided £1,320 to the Police for the purchase of one trailer, this was matched by the Police who provided a second.
- **Vehicle Crime Mobile Unit:** following the 2003 funding £18,000 was provided by the VARI to purchase and adapt a redundant fire brigade command unit. Focusing on the themes of Victim, Offender and Location, the vehicle will house displays and information surrounding vehicle crime and be used to raise awareness and provide advice to the public (specifically targeted to at risk groups). The Partnership is waiting for the release of the unit from fire brigade service; this is expected to occur in March 2004.
- **Tri-Signs:** 100 reusable, all-weather, bi-lingual tri-signs, attached to lampposts in prime theft sites, were purchased by the VARI (funding of £2,000 was provided to the Police who took the scheme forward). These signs warned of the risk of theft to owners of vehicles in the locality.

### ***Reducing Proclivity to Offend***

The project team were also involved in activities to try and reduce proclivity to offend. It should be noted that this has not been the main focus of project activity and involved

considerable input from partner organisations. This element of the project included three main strands of activity:

- **Providing Equipment to Local Youth Groups** – through a local Housing Forum, a Youth Club organiser was approached by the Partnership and offered funds to regenerate interest in the club. The sports equipment required was drawn up, the sports equipment along with some fishing equipment was purchased (at a cost of £645) by the Partnership using its contacts and sponsorship links.
- **Involvement in the Duke Of Edinburgh Scheme** – the Partnership Officer was involved in meetings with the Youth Offending Team to promote the use of this scheme in the local area.
- **Development of the Youth Offending Team CD Rom** – the Youth Offending Team were provided with £7,000 to produce an educational CD ROM, incorporating an existing 'Impact Road-show' video. This assisted in work with vehicle crime offenders (including vehicle arson offenders). The Partnership Officer intends to secure a copyright and sell the disk to other agencies across England and Wales, ploughing the small profits back in to arson prevention work in Swansea.

In addition to these activities, the Young Fire Fighters Scheme and the Genesis Scheme for Young Offenders have been utilised by the VARI to take referrals of those at risk of committing vehicle arson.

### ***Detection***

The VARI did not devote time specifically to increasing detection of vehicle arson, however, through the DVLA link (see above), the Local Authority received information that is pertinent to conducting investigations faster. It is envisaged that this could potentially increase detection rates in the future, although no evidence is available at present. In addition to this, £3,000 was devoted to the Police to provide overtime hours to enable high profile investigations to be undertaken on fraudulent arson claims, with three detectives working in association with the Fire Brigade Arson Officer.

### ***Situational Prevention***

Some efforts have also been made by the project to reduce the opportunity for vehicles to be stolen or for stolen vehicles to be dumped in places where they will be vulnerable to arson. This activity included:

- **Securing Car Parks:** during 2001 and 2002, two car parks in the Swansea area were visited and upgraded to meet the criteria for Secured by Design. A total of £2,500 was provided by the VARI for upgrading (with the LA providing an additional £4,500) and new barriers were installed along with other environmental measures such as clearing shrubbery and improving natural surveillance. Four car parks were awarded 'Secure by Design Awards' in early 2002 and a further four car-parks have been upgraded and have been granted Secured Status in 2003.
- **Securing other sites known for car crime:** eight sites, known for being popular theft, dump and burn sites (ranging from the shopping centre car park to a river bank), were cleared and secured during the life of the project. Each site



was identified through analysis of fire data and through the knowledge of local officers. These sites all received a site visit from a multi-agency group, who determined the actions required to secure the sites. Each site was cleared of existing abandoned vehicles (free removal through the local contractor, although a crane was hired to permit removal of vehicles from the River Tawe). Securing of sites occurred through installation of barriers and boulders (purchased and installed by contractors) to prevent access to unauthorised vehicles and £17,050 was spent to clean up and secure these sites.

- **Provision of Autolocks: 50 Autolocks were purchased by the Police using ACF funding (£1,500). These were made available to vulnerable vehicle owners free of charge. A total of 13 vulnerable people (both victims of crime and pensioners) have been presented with autolocks to date.**
- **Provision of school CCTV cameras: a local school, identified by the partners as being vulnerable to vandalism and arson, was provided with an in-depth risk assessment and report. As a consequence of the recommendations in the report, the partners devoted funding of £16,000 to install two 360 degree, vandal proof, digital cameras (£8,300 of ACF funding).**

### ***Other activity***

A variety of other activities took place that involved the VARI both directly and indirectly. These include:

- **Part funding of the Vulnerable Vehicle scheme:** The Police and Local Authority ran a Vulnerable Vehicle Scheme, whereby unattended vehicles were identified to be at risk, then security advice was either placed on the windscreen or was sent through the post to the registered keeper. The VARI as a whole were not directly involved in this initiative, but provided funds for the production of booklets to raise awareness within the Police and LA (see above).
- **Part funding of the Trap Vehicle Initiative:** South Wales Police also ran a 'Trap' Vehicle Initiative, involving the use of several cars, specially adapted, with GIS tracking, remote control, smart water marking systems, and cameras. These vehicles were then left in areas where vehicle theft was high, and used to gather evidence on those who tried to steal it. This operation is ongoing, and has been used in several locations throughout Swansea.

Following the second and third rounds of funding Neath/Port Talbot Partnership were allocated £24,000. This money helped to secure prime arson sites, purchase and install tri-signs, enable the use of the Swansea 'Trap' Vehicle and purchase a number of autolocks for distribution. In addition, Carmarthen received £22,000 to secure popular dump and burn sites, and remove abandoned vehicles from the area (the contractor available to both Swansea and Neath/Port Talbot for free removals does not cover the Carmarthen area).

## **PROBLEMS EXPERIENCED**

The VARI reported a number of issues which had caused problems for the running of the scheme, these are outlined below;

- **Complaints from Contractors:** there were complaints from other vehicle removal contractors that Ferrybridge hold a monopoly over the area. However, Ferrybridge were the elected contractor for the Local Authority and had tendered legitimately for the contract. The Fire Brigade tried to keep a distance from this relationship and to deal with all complaints objectively.
- **Contacts and Responsibility:** problems in contacting appropriate departments in the Local Authority and engaging them in crime and disorder reduction proved difficult as the authority had a lack of knowledge regarding section 17 of the Crime and Disorder Act and obligations to consider crime and disorder. Often Departments were found to be insular and reserved with regard to engaging with the partnership and the VARI.
- **Funding Issues:** the cessation of the project funding and the bidding process as a whole created problems in planning and continuing projects. As a result, plans for future work was curtailed or even scrapped, thus causing demoralisation amongst staff and partners. Sponsorship from local agencies also proved difficult to secure with local businesses having little incentive to support the VARI. However, it is noted that the funding that was secured acted as a seed for subsequent funding, and allowed the VARI to propose projects and secured partner resources.
- **Perception of Arson Reduction:** a fire officer involved with the VARI suggested that there is a feeling within the Fire Brigade that the project was 'just dealing with car fires' and that the officers seconded to it were 'having it easy'. Linked to this was a perception that the Fire Brigade as a whole were wary of partnership working.

## SUMMARY/ KEY PRACTICE ISSUES

Similar to many ODPM funded projects, the Swansea vehicle arson reduction initiative (VARI) focused upon the reduction of vehicle arson. This aim of the project was to reduce the problem identified with vehicle arson in the area through the removal of abandoned or stolen vehicles, securing popular 'dump and burn' sites and raising awareness of the problem. The project built upon an existing initiative that was established in 2000 and used ODPM funding to develop the project. Its key elements are outlined below.

### *Scanning/ analysis*

Scanning of data for the year 1999-2000 identified that vehicle arson was becoming a particular problem in both Wales and within Swansea. A total of 33% of deliberate fires in Wales were vehicle related and in Swansea there had been a 20% increase in vehicle fires from the previous year. This initial scanning identified that a problem existed though the project conducted further analysis to identify problem areas. This primarily included getting officers on appliances attending vehicle fires to note the key details and these would be recorded on a database. This data is used by the brigade and the police and has been running since May 2000.

### *Response*

A number of responses were implemented as a result of the initial scanning and analysis. These focused upon removal of abandoned or stolen vehicles, securing popular 'dump and burn' sites and raising awareness of the problem. Removal of

vehicles focused upon burnt-out vehicles and abandoned vehicles. Awareness raising focused upon developing literature such as posters and booklets to raise the project profile and provide information to the public, and securing 'dump and burn' sites has focused upon securing car parks and known dumping areas. Some other project activity has included working with local youth clubs and the youth offending team to reduce proclivity to offend.

These responses have generally been implemented successfully due to close partnership working, though there have been some problems experienced. The main problem has related to the use of the contractor for vehicle removals. A number of local companies had complained that they were excluded from the project. The contractor who holds the scheme contract is the only one who has tendered to provide removals free-of-charge.

### ***Assessment***

The project has ensured that a number of abandoned vehicles have been removed from the streets and that a number of situational measures have been taken to reduce vehicle arson. Some anecdotal data suggests that the project is proving to be successful, though a full quantitative assessment is given in Annex C.

# Case Study 9: West Sussex Youth Arson Reduction Co-ordinator

## INTRODUCTION TO THE PROJECT

The project was located in the county of West Sussex on the south coast of England. It has a population of 753,614 people. The population is generally older than the national average with 39% being over 50 (compared with 33% nationally). There is a slightly higher than average population density with 3.8 people per hectare compared to 3.4 in the whole of England and Wales, though there are few areas with significantly high populations. The local economy is predominantly reliant upon agriculture and tourism.

West Sussex has its own fire brigade and is covered by Sussex Police Force (which serves both East and West Sussex). The area has low levels of social deprivation, with only one of its seven local authority areas being ranked in the 2nd quartile, the others fall into the less deprived 3rd (3) and 4th (3) quartile of the indices of multiple deprivation. The crime rate is also relatively low, with just 88 recorded crimes per thousand population in 2002/03 (89 in 2001/02). A total of 22% of households were victims of crime at least once during 2002/03 an increase from 19% in 2001/02.

The recognition of the need for a youth reduction co-ordinator was born out data analysis that suggested that West Sussex had a problem with arson. In 1999/00 there were 3,744 fires in West Sussex, of which 2,093 (56%) were believed to have been deliberately started. Although the total number of fires fell in 2000/01 to 3,398 a greater percentage of them (59%) were thought to be arson. In addition to this, research showed that young people were responsible for setting the majority of deliberate fires. The experience of the volunteers in West Sussex Fire Brigade Young Fire Setters Programme indicated that these young people often had multiple problems such as; substance abuse, high risk behaviour, low self esteem and are often excluded from, or at risk of exclusion from school.

## PROJECT BACKGROUND

As a consequence of the recognition of the involvement of young people in arson, the Chief Fire Officer's Policy Group (Youth) Project determined the requirement for a specialist team dedicated to the problem of youth arson. To this end it was determined that a multi-agency project team should be established, and key members from West Sussex Fire Brigade Community Protection and West Sussex County Council Community Safety team were drawn from the Policy Group to manage the project team. As part of the strategy a number of potential sources of funding streams were approached, including the ACF. The bid to the ACF requested £30,000 to recruit and retain an Arson Reduction Co-ordinator (Youth) for one year (2002-2003), though over £400,000 was secured from various other agencies for youth projects.

The funding from ODPM enabled the new partnership project focusing on young people to develop. The principle aim of the Youth Project Team is to:

- Develop a co-ordinated and efficient approach to reduce young peoples engagement in crime

- Engage young people in positive activities
- Offer alternatives to those who have a history of offending
- Educate and raise self-esteem in those at risk of committing arson
- Make young people aware of the dangers and consequences of arson.

Although the main priority of the team was to reduce the number of non-accidental fires, the work was also hoped to impact on other areas of anti-social behaviour and crime. Thus, by impacting upon arson it was hoped that other offences types would also be reduced.

## **PROJECT STRUCTURE AND ACTIVITY**

Following the successful bid to the ACF, the recruitment process for a Youth Arson Reduction Co-ordinator (YARC) began. Originally, it was envisaged that the post holder would be recruited during April and May 2002. However, due to a complex job description and ratification being required from the County Council, the advertisement was not placed until July 2002. In late September the successful candidate was appointed and took up post in November 2002. The appointee had existing links to the Youth Offending Team, Social Services and the Southern Area Crime Stoppers.

The Youth Project Team were strategically overseen by the Chief Fire Officer's Policy Group (Youth). As previously stated, this was a multi-agency group with representatives from West Sussex Fire Brigade and West Sussex County Council (Community Safety Unit), though there was also participation from the seven West Sussex Crime and Disorder Partnerships (CDRP's). Six of these CDRP's included reducing arson in their strategic priorities. The project structure and its associated activity are detailed in Figure B9.1.

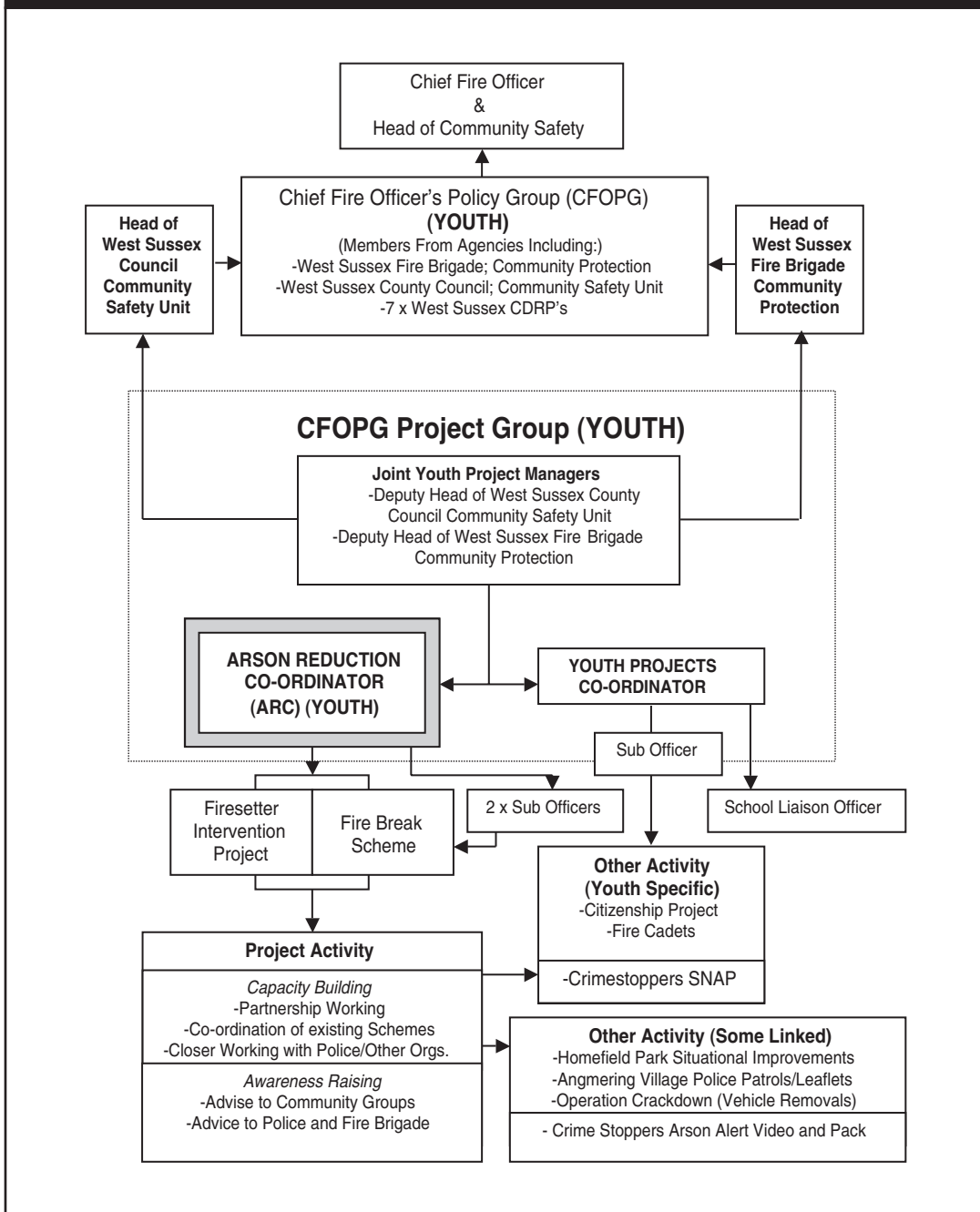
The key objectives for the Youth Arson Reduction Coordinator were to:

- Co-ordinate the existing Firesetters Intervention Scheme
- Increase the number of advisors and referrals
- Help establish a new Fire Break Scheme.

During the thirteen months since the inception of the project the focus of activity has been raising the awareness of the Fire Brigade, Police and Community Groups, regarding the existence of the Youth Projects Team, the Firesetters Intervention Scheme and the problem of youth disorder and deliberate fire setting.

Full support from the senior officers and the Youth Project Team, has meant that the YARC has been able to propose and implement solutions to the problems encountered with their help and encouragement. The back-up from the high ranking officers has been seen as crucial in establishing an integrated and extensive youth project.

Figure B9.1. West Sussex Arson Reduction Co-ordinator (Youth): Project Structure and Activity



The key elements of the YARC work and project activity are detailed below.

**Capacity Building**

As with most of the New Projects a large proportion of time was spent on capacity building. Within the West Sussex project this has included allowing the coordinator to understand the project and their role, and develop partnership approaches to allow successful delivery. These are outlined below.

- Understanding the role:** During the initial stages of the project, following the recruitment of the YARC, a period of ‘getting to know the role’ was required, and the YARC spent a period of time reading material related to the various projects

within the fire brigade, and establishing links with the agencies linked to the Youth Project.

- **Development of partnerships:** The YARC was also involved with a number of multi-agency groups across the county. The YARC was a board member of the Southern Area Crime Stoppers, works with local Crime and Disorder Reduction Partnerships, and has been involved with three problem solving initiatives in a consultancy. This has included giving advice to the county council and the police on situational crime prevention.

The very nature of the role of the YARC in co-ordinating the Firesetters Intervention Scheme was based around Capacity Building. The YARC worked with all of the Firesetters Advisors establishing a support network, recruiting further advisors (all voluntary) and arranging training for these advisors. The YARC also worked on the Fire Break Scheme which has seen a pilot scheme run during the autumn school term. The scheme is about to be run for the second time, with the YARC overseeing the project in a line management and advisory role.

### ***Awareness Raising***

Raising awareness about arson issues both internally and externally was closely linked to capacity building. This element of the project included:

- **Promotion of brigade initiatives:** The YARC attended a number of Community Events open to the public to promote the Youth Projects Initiative and the Firesetters Intervention Scheme. In addition to this, presentations were made to the local CDRP's and other community groups to promote youth issues and the project.
- **Working with Crimestoppers:** Crimestoppers (Southern Area) (in association with West Sussex Police Force, East Sussex Fire Brigade and West Sussex Fire Brigade) produced an Arson Alert Video and Information Pack. This targeted secondary schoolchildren and highlighted the effects of arson. The video and information pack were made available free of charge to all UK fire brigades, police forces and Crimestoppers regions. The YARC was actively involved in the production of the video and pack, the launch and securing funding.

### ***Reducing the Proclivity to Offend***

Some activity aimed at reducing the proclivity to offend has also been implemented. This has included working directly with young people at risk of offending, offering alternative activities to such people and providing education to them. In further detail such activities include:

- **The Fire Break Scheme:** This was run as an eleven week pilot scheme with three groups of children (at risk of committing offences) referred from local schools (each group having 10 young people). The scheme ran for one day per week and covered a range of activities from adventure pursuits to fire safety. Four of the children who attended the scheme have subsequently applied to become fire cadets. A second series of sessions is due to begin shortly. The YARC continues to oversee the Fire Break Scheme, in a line management and advisory role.

- **Educational sessions at local special needs schools:** The YARC ran these sessions and a total of 45 special needs children attended. The sessions covered issues surrounding fire play and arson.

### ***Other Activity***

In addition to those projects that were directly under the responsibility of the YARC, the Youth Project Team were also involved in a number of other related schemes. The Fire Cadets, where youths (13-17 years) learn about the various aspects of the fire service, is an ongoing active scheme at the Worthing Station. It is planned to introduce two further similar schemes in the West Sussex area. The Crime, Consequence and Citizenship Project is another planned, multi-agency project, aiming to deliver educational activity days to local secondary schools (as part of the Personal, Social and Health Education/Citizenship Curriculum).

West Sussex Fire Brigade, West Sussex County Council and Sussex Police are all also involved in an ongoing multi-agency, fast track, abandoned vehicle removal project (Operation Crackdown), which was established before the implementation of the Youth Project Team.

## **PROBLEMS ENCOUNTERED**

As with all projects there were some problems encountered, these are outlined below:

- **Recruitment Delays:** the initial job specification development was more difficult than first imagined, and with ratification required from the County Council, a significant delay in the recruitment of the YARC was seen. However, the engaged post holder had significant links within local government and with youth agencies, so links and contacts were already established, helping to speed up the project implementation.
- **Understanding Brigade Procedures:** during the project the YARC was responsible for many operational personnel. Not being an operational fire officer herself, she found it a challenge at times to ensure that the staff kept up-to-date with their training and development. The YARC was aware in some cases that non-operational staff were viewed with caution and that the working practices and structure of the fire brigade can be intimidating to new staff.
- **Staff Abstractions:** staff illness and leave created some issues in running initiatives. Although these are difficult to foresee, the lack of back-up staff has meant the YARC had to neglect other duties to cover the Fire Break programme. Greater support and flexibility in staffing and in the programme schedule are being considered, to negate future problems.
- **Referrals to Schemes:** the referral process to the Fire Break Scheme was found to be problematic with inappropriate referrals occurring (such as children out of the age range), a new set of referral criteria is being established to avoid further problems.
- **Transport to Schemes:** transport for the children on the scheme created further problems, with parents having to pay for the children to attend in some cases. It is intended that the Youth Projects team will purchase a Mini-bus, in future months, to provide free transport for all the youth schemes.



## **SUMMARY/ KEY PRACTICE ISSUES**

This project was based around employing a youth coordinator to develop and coordinate youth programmes after funding was received in April 2002. Therefore, unlike many of the other ODPM funded projects this was not based upon specifically implementing a number of strategies to reduce arson but to coordinate a number of projects based around a specific theme. Its key elements are outlined below.

### ***Scanning and analysis***

There was a recognition that there was both a problem with arson in the West Sussex area and that young people might be responsible for a high proportion of these incidents. In total, 59% of fires in the county in 2000/01 were deliberate, and though the overall number of fires appeared to be falling the proportion of deliberately started fires was rising.

### ***Response***

The response to these data was to employ a youth coordinator to promote and coordinate youth issues within the brigade. This role included spending a proportion of time initially understanding and developing the role. Here there was a development of a number of partnership approaches to the problem. This included continued development of the firesetters scheme and establishing the fire break scheme which both aimed to work with those who are fire setters or at risk of fire setting. In addition to this, the YARC also worked to raise awareness of such issues. This has included promoting fire brigade issues at community events and working with crimestoppers.

### ***Assessment***

The assessment of this project will primarily consider fires by small children.

# Case Study 10: West Yorkshire Joint Fire and Police School Arson Reduction Initiative/ Schools Arson Audit

## INTRODUCTION TO THE PROJECT

West Yorkshire is a Metropolitan area with a population of over 2 million people. The largest centres of population are the cities of Leeds and Bradford. Over 715,000 of residents in West Yorkshire live in Leeds, and over 300,000 in Bradford. Overall, the demographic composition of the area is broadly reflective of other metropolitan areas, though Bradford has a larger Asian population than average and both Leeds and Bradford both have a larger proportion of under 25's than the national average. Leeds has a particularly large proportion of 20-24 year olds, no doubt boosted by the two Universities in the city. Due to the general decline of the textile and coal mining industries in the later part of the 20th century, West Yorkshire is a relatively deprived region. This is particularly evident in the Bradford and Wakefield areas, and even the most prosperous towns (Leeds and Calderdale) have a significant proportion of residents living within the top 10% socially deprived areas in the country. There appears to be a rising crime rate in the area with 141 in 1,000 people being victimised in 2002 rising to 155 per 1,000 in 2003. The BCS also recorded high prevalence rates of crime, with 26% of households being victims during 2002 and 27% during 2003.

Initial scanning of data on deliberate fires in West Yorkshire suggested that arson in schools is a particular issue in the region. In 2001 there were 140 primary fires in educational establishments, 77% of which were deliberate. There were a further 548 deliberate minor fires in and around schools in this period.<sup>40</sup> It was noted by the project that schools where incidents of arson occurred tend to be in socially deprived areas. Such areas give the appearance being 'run down' and crime indicators such as litter are a particular feature. These 'crime indicators' not only make the area appear unattractive, but help to further generate incidents as the presence of refuse also provides fuel for arsonists.

West Yorkshire fire brigade (in partnership with the police) responded to the arson issue in schools by proposing that arson audits be undertaken in those identified as at particular risk. Advice to schools and their governing bodies on how to reduce arson and its consequences would also be provided. A total of £76,000 funding was received over a two-year period from August 2001 and an Arson Reduction Officer (ARO) and a Crime Reduction Officer (CRO) were appointed to undertake audits. On the basis of fire brigade and police data, schools that had experienced arson attacks were targeted for the intervention. Here, the 'Onion' approach was adopted where ARO and CRO would visit the premises and address all the arson related issues in the neighbourhood around the school, within the school perimeter and within the school buildings. The findings from this exercise would be reported to the staff within the school and eventually followed up by an audit six months after the initial visit.

<sup>40</sup> There are no comparative statistics available from other local areas here.

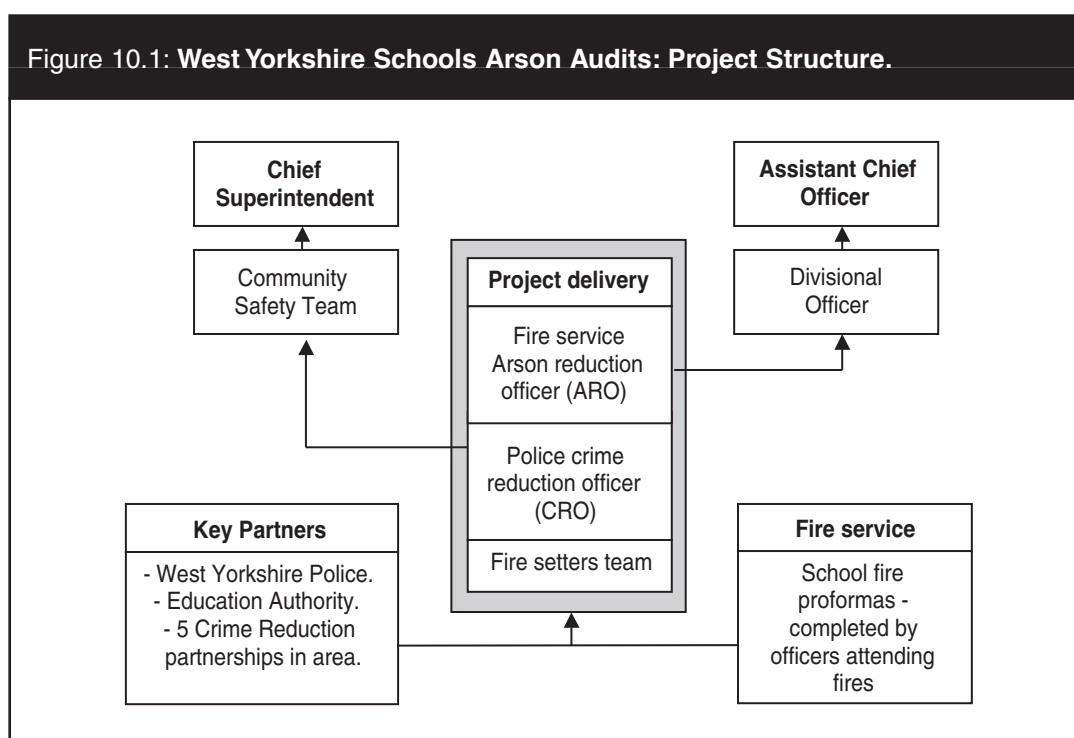
## PROJECT BACKGROUND

West Yorkshire brigade submitted the original bid for the project in April 2001. The bid outlined some initial scanning that had been conducted in relation to schools and recognised that there was a potential problem with school fires in the West Yorkshire region. It had been observed that in 2001 there were 140 primary fires and 548 secondary fires in schools (this is nearly two per day) and that the potential financial cost and disruption to local communities was significant.

The bid outlined that the response to the problem would be based upon continued partnership working. Six months prior to the bid a partnership approach was developed with the police to conduct arson audits in schools deemed to be most at risk. The project bid outlined plans to allocate a fire safety officer and a crime reduction officer to the project full time and for the brigade firesetter/ schools liaison team to provide support and input when required.

## PROJECT STRUCTURE AND ACTIVITY

Funding of £38,000 was received for both years of the project (a total of £76,000). Funding began in April 2001 and the project fully commenced in August 2001. Day-to-day management of the project lay with the head of brigade's Community Fire Safety Department. The Department had ownership of the project and was responsible for all elements of the project, although the police had some input into identifying high-risk schools. The overall project structure is outlined in figure D10.1.



The focus of the project was on arson in schools, though it was not simply based around tackling arson in schools as a single issue. It was recognised that anti-social behaviour, disorder and crime can be indicators or predictors of future incidents. The project team were fully aware of the high prevalence and incidence of arson in and around schools and therefore developed an approach based upon:

- Monitoring police crime data and fire brigade data to identify schools that were at risk (originally the 50 schools that appeared most at risk were selected).
- Visiting schools that had been victims of crime and arson incidents.
- Writing detailed reports of the risks each school faced.
- Conducting follow-ups with schools six months after the initial visit.

These elements of the project are considered in further detail below.

- **Monitoring police crime data and fire brigade data to identify schools that may be at risk:** The first part of the project involved scanning police data to identify schools most at risk. Initially, 50 schools across the region were highlighted as having significant crime, disorder and arson problems. These schools were visited and audit reports completed. Of the first 50 schools audited:
  - 49 had had fires according to fire service records.
  - 15 had previously reported fires to the police.
  - 54% had not reported any incidents of arson following the intervention but some schools had reported more incidents of arson.
  - In the 15 schools that reported arson to the police, there was a 60% reduction in arson in the following 18 months.

Following the initial 50 visits; the project team began to target other schools where there *had* been a report of a fire or where the team thought there was a *risk* of fire. These schools were targeted through monitoring police and fire data and through referrals from fire officers suggesting that particular schools were at risk. For schools where a fire had occurred an incident proforma would be completed by the commander in attendance after a call out to the fire. A number of key details about the site of the fire would be noted such as where the fire started, whether the cause was deliberate, if there had been any previous fires on the site and key risk factors apparent at the school.

- **Visiting schools that have been victims of crime and arson incidents:** On completion of the background details to the incident, the school would then be visited. Here the project used what was referred to as the 'onion' approach to assess factors that promote risk. The 'onion' approach considered:
  - The factors in the neighbourhood around the school that may increase crime and the risk of arson.
  - The factors within the school perimeter fence that may increase risk.
  - The factors within the school buildings that may increase risk.

These factors were considered methodically as the CRO would complete a Crime Reduction Officers assessment record and the ARO would complete an Arson Reduction Officers fire assessment record (these were devised by the project staff). The CRO assessment record was a crime prevention audit of the school and considered a number of aspects of security such as:

- The perimeter of the school: The state of the current perimeter fencing, car parks around the building and gates.

- Protection of the school building: Such as shape of the school, roof access, external CCTV and lighting.
- Internal security: Entry to building, use of security guards, visitors procedure, computer security, internal doors and access around the schools, types of windows.

The ARO assessment record assessed factors such as:

- Sources of ignition: Such as heaters boilers and driers.
- Combustible materials: How they are stored and their risk.
- Fire detection systems: Such as alarms
- Means of escape: Exit doors and any obstructions, are they adequately lit, and sign posted properly.
- Fire fighting equipment: If this is properly installed and in good working order.
- Emergency plans: The action plan on discovery of fire, raising the alarm and using equipment.
- Fire certificate: Are all workplace requirements complied with?

Both the CPO and ARO reports considered the overall fire and arson risk to the school, calculated a risk rating and considered any further action that should be taken for the school. This would be written into a comprehensive report and presented to the school.

- **Writing detailed reports of the risk each school faces:** After the audit was completed a full report would be written and sent to the school. This was a comprehensive document and included:
  - School details: This included the main contact points in the school and the details of the caretaker and site manager.
  - School profile: The key background details of the school such as number of pupils, entry points, size of site and surrounding area.
  - CRO report: This covered key features such as existing security and proposed security, internal and external security and recommendations for future security.
  - ARO report: This covered existing fire and security measures, exterior and interior security risks and proposals.

The proposals for future action included recommendations over factors that increase both the risk of arson or of the spread of fire in general. This included recommendations about physical crime prevention mechanisms such as perimeter fencing, CCTV and doors resistant to both fire and break in (external and internal). Recommendations were also made to ensure that there was fire risk training for staff, regular evacuation drills, a written fire safety policy in schools, that fire safety equipment (such as extinguishes, alarms and detectors) was installed and tested and to ensure that rubbish bins were locked at least eight metres away from the building to restrict the spread of fire.

- **Conducting follow-ups with schools six months after the initial visit:** After the initial visit, a follow up was conducted six months later. Here, a follow-up proforma was sent to the school. This asked if the survey was beneficial, if any of the recommendations were included in the school crime and fire risk assessment, if arson/ attempted fire incidents had reduced since the audit was completed and if vandalism/ property damage had reduced. Anecdotal evidence suggests that schools have benefited from the visits with many commenting that the audits proved to be of use and helped them to re-assess their security systems and fire safety.

## PROJECT IMPACT.

Though it is apparent that schools viewed the visits as beneficial a number of other impacts of the project were also observed. These include:

- **Reporting of arson incidents:** Many schools do not report fires to the police, as discipline issues are dealt with internally. However, following audits, increased awareness appears to have led to an increase in reporting, and hence figures may distort the positive effect of the intervention.
- **Designing out arson:** The project team did have some success highlighting the importance of school design to the local education authority (LEA). This included:
  - **Improving building safety:** There was some success in altering the attitudes of LEAs where the safety of buildings are concerned. For example, Leeds LEA agreed to demolish some substandard schools, as it is cheaper to rebuild them than to bring them up to fire safety standards.
  - **Incorporating fire safety at the planning stage of schools:** Progress was also made in incorporating safety in the planning stage of buildings. For example, in Bradford they have architectural liaison officers who are involved in the planning stages of schools and are thus able to ensure that plans for new schools give full regard to fire safety. Building site managers have also contacted the project for advice during construction.

Despite this progress, there were also problems accounted in trying to ensure that safety is to the standard that the fire service would like to see. When new schools are being erected it is mandatory for the plans to be passed by the fire service. However, for a number of reasons, the fire service has less impact on construction than they would like. Whilst the team has been involved in meetings with building contractors, they can only affect new parts of schools and not existing buildings, and the LEAs tend to have the last word regarding the specification. The building regulations only allow for a basic standard of fire safety and recommendations for improvements made beyond these guidelines are dependent on the budget that exists. It is often fire safety provisions that tend to be dropped when the building budget runs low.

- **Support of insurance companies:** Insurers were identified as useful allies in reducing arson. They are able to put pressure on schools and LEAs by withholding insurance unless the required building improvements are made. The project team measured insurance claims made by schools through one major company before and after the start of the project. In the 17 months prior to the project the company paid out £17 million in claims in West Yorkshire. In the 21

months after the project began, they paid out £4 million (an average of around £1m per month to less than £200,000 per month). What is more, this was achieved through raising awareness and basic, low-cost, physical improvements.

## PROBLEMS EXPERIENCED

Despite these positives, there were some problems encountered by the project. These included:

- **Lack of school funds for improvements:** Fire safety and adherence to fire regulations are of low priority to most schools. The fire service has limited powers in this respect and the reality is that many schools do not have the funds available to implement improvements suggested by the fire service. Of the 189 schools audited to the end of the funded project, 90% were restricted from making the recommended improvements due to lack of funding.
- **Lack of project funding:** As fire service and police funding ended in September 2003, the staffing of the project had to be readdressed. Further funding from the police enabled the CRO to continue in post after the end of the project, though the ARO has been tasked with the development of an arson task force for the area. The new arson task force will further develop arson reduction and fire safety in schools as an issue and the CRO will continue to progress the work started in the NPI project.

## SUMMARY/ KEY PRACTICE ISSUES

The West Yorkshire joint fire and police school arson reduction initiative implemented a clear response to an identified problem in the region. This was based upon conducting arson audits with schools. These audits were conducted jointly between the police and fire brigade and were funded from August 2001. The project is summarised below.

### *Scanning and analysis*

The project was based around initial scanning of data that suggested that there was a particular problem with arson in schools in the area. There was also evidence from police data that schools were both generators and attractors of crimes such as vandalism and arson. Analysis of general crime and arson data within schools continued throughout the project. Many schools that were visited were originally identified through analysis of police and fire brigade data, though referrals were also made from officers in attendance at fires.

### *Response*

The response to the identified problem was to conduct audits with schools that had been victims or where there was a perceived risk. The visits were conducted by both a police officer and a fire officer and were based upon the 'onion' approach where risk factors are considered outside of the school, inside the perimeter fence and within the building. A report would then be submitted to the school outlining the risk factors and making recommendations for prevention.

Some problems were identified with this approach. First, the audits were time consuming and it became a strain for two staff to conduct visits to all schools that were victims or appeared to be at risk. Second, it was often difficult to get schools to

implement the recommendations of the reports due to a lack of funding. Therefore such an approach may have more impact if small grants were available to help schools with installing security hardware or if equipment such as CCTV could be loaned to them. Finally, if such a project is to realise its full potential it requires a longer period of implementation. The project was not fully operational until August 2001, and funding ended in September 2003. This period allowed the project to 'find its feet' though an increased period of implementation could have allowed such a project to make significant inroads into the problem of arson in schools in the area. It is significant that West Yorkshire Police are continuing to fund the role of the CRO and the new arson task force is to continue to develop strategies to reduce arson in schools.

### ***Assessment***

Feedback from schools suggested that those in receipt of the audits valued the input from the officers. Further evidence from a local insurance company also suggested that insurance payments to schools were significantly reduced after the inception of the project. Whether the school audits had any impact upon these figures is open to debate. By December 2003, 236 schools had been audited though it is, however, unclear what the schools have actually installed as a result of the audits and thus how much a reduction could be credited to project intervention (as this has not been monitored). In the original 50 schools audited significant reductions in arson were observed, though some schools did begin to report more minor incidents after the audit. A full impact assessment project is given in Annex C.



# ANNEX C

## Impact Analysis of individual Projects

### Impact Analysis 1: Avon Car Clear in South Bristol

#### OUTCOME DATA USED

The outcome data used to assess the impact of the Avon Car Clear project in South Bristol consisted of the raw data on all fires recorded by the brigade between April 2000 and December 2003. This data set consisted of 32,656 records and included both FDR1 and FDR3 fires.

#### ANALYSIS OF IMPACT

The project in South Bristol concentrated on deliberate vehicle fires and a number of interventions were undertaken to tackle this issue. They included a 'Car Clear' scheme, which aimed to remove reported abandoned vehicles, an auction house scheme, which attempted to remove the availability of low value vehicles at source, and schemes that aimed to remove vehicles from businesses either before being abandoned (motor trade scheme) or once abandoned on commercial premises (commercial trader scheme).

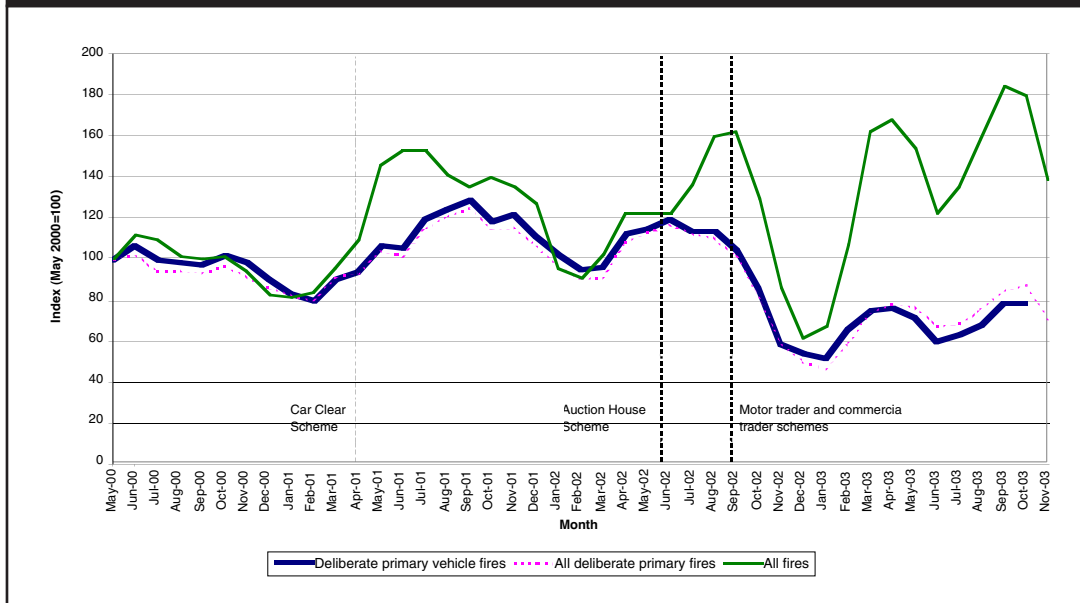
#### ***Deliberate primary vehicle fires***

Figure C1 shows the trend in deliberate primary vehicle fires, all deliberate primary fires and all fires in South Bristol. Following the introduction of the Car Clear scheme, there was an increase in the number of deliberate vehicle fires in South Bristol. However, from September 2001 onwards, deliberate vehicle fires began to decline and continued a general downward trend for the duration of the project.

The downward trend in deliberate vehicle fires accelerated once the auction house and motor / commercial trader schemes came on-line in 2002. This may suggest that the reduction was due to a combination of approaches, all of which were aimed at tackling deliberate vehicle fires from different perspectives.

Figure C1 also shows that total deliberate primary fires followed a similar pattern to deliberate primary vehicle fires. By contrast, fires of all kinds showed a general increase over the same period. This meant that deliberate fires as a proportion of all fires recorded in South Bristol declined during 2003.

**Figure C1: Deliberate primary vehicle fires, all deliberate primary fires and all fires in the South Bristol area (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**



In addition to comparisons to other types of fire, analysis of impact was undertaken in comparison to three other areas. Humberside was selected as an area that was in the same brigade family, while comparisons were also made to the Family Group as a whole and to England and Wales. Figure C2 shows the indexed trends for these areas. Data on the Family Group and England and Wales were only available up to the end of March 2003 at the time the analysis was undertaken. In comparison to all three areas, South Bristol performed relatively well. The most striking difference was with Humberside, which witnessed a steady increase over the entire period. Where the Family Group and England and Wales are concerned, the trends were similar until September 2002, when deliberate vehicle fires began to fall at a faster rate in South Bristol.

**Figure C2: Deliberate primary vehicle fires in South Bristol, Humberside, Family Group and England & Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

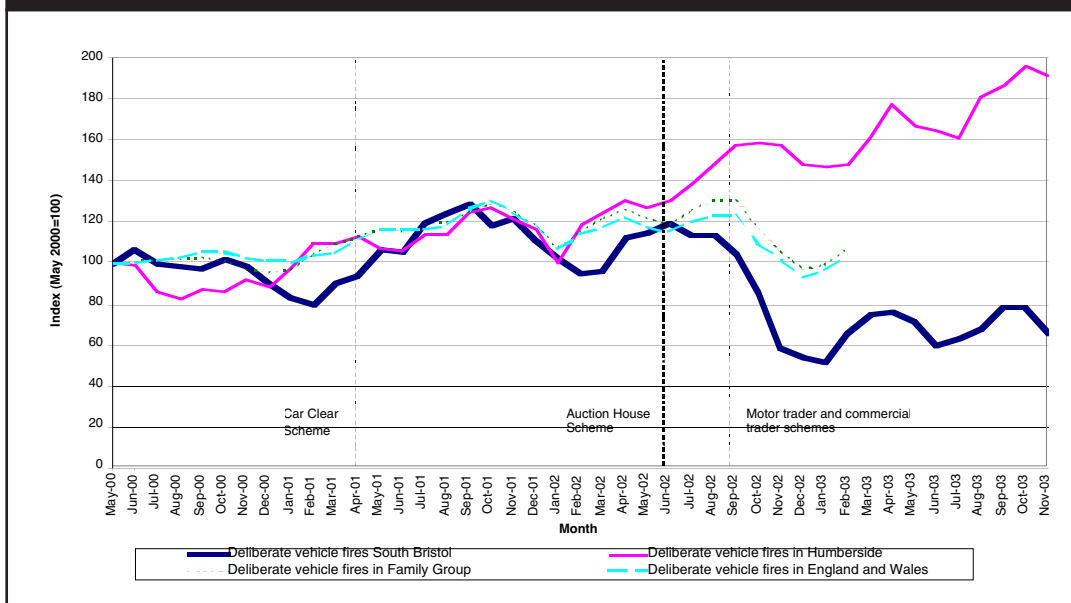


Table C1 shows that, between April 00 – March 01 and April 01 – March 02 (a year pre / post intervention), deliberate vehicle fires rose by 19% in South Bristol.

**Table C1: Number of deliberate primary vehicle fires in South Bristol, Humberside, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Apr 00 to Mar 01	Apr 01 to Mar 02		
South Bristol	679	809	+19	*
Humberside	1,164	1,398	+20	*
Family Group	19,668	23,261	+18	**
England & Wales	63,679	73,695	+16	**

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

In Humberside the rate was slightly faster, while in England and Wales and the Family Group, the rate of increase was slightly slower.

Table C2 shows that the expected level of deliberate vehicle fires, based on the lowest estimate of impact (comparison to England and Wales) and on the highest estimate of impact (comparison to Humberside).

**Table C2: Expected number of deliberate primary vehicle fires in South Bristol (April 2001 to March 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	788	815
Actual level	809	809
<b>Difference</b>	<b>+21</b>	<b>-6</b>

On this basis, we can conclude that the Avon Car Clear scheme in South Bristol resulted in between 21 additional deliberate vehicle fires and six fewer deliberate vehicle fires.

It is important to note that a standard procedure has been applied here, in which a one year period pre and post intervention implementation has been chosen as the basis for measuring impact. In South Bristol, data were available for a second post intervention year. This revealed larger differences between South Bristol and the comparison areas, corresponding to the decline witnessed from September 2002 onwards. This second post intervention year suggested that the Avon Car Clear project resulted in between 33 fewer (lowest impact estimate) and 394 fewer (highest impact estimate) deliberate primary vehicle fires.

***Deliberate primary fires***

One would expect to see the impact on deliberate primary vehicle fires translate into a reduction in all deliberate primary fires. This is important as the ACF funding was to tackle the problem of arson in general. Table C3 suggests that, on the one year pre / post analysis, this does not appear to be the case. Deliberate primary fires of all kinds rose by 18% in South Bristol, compared to slightly lower rises elsewhere.

<b>Table C3: Number of deliberate primary fires in South Bristol, Humberside, Family Group and England and Wales</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Apr 00 to Mar 01	Apr 01 to Mar 02		
South Bristol	819	966	+18	**
Humberside	1,958	2,295	+17	*
Family Group	29,945	35,148	+17	**
England & Wales	97,332	111,788	+15	**
* statistically significant at the 0.05 level, based on the Mann Whitney U test.				
** statistically significant at the 0.01 level, based on the Mann Whitney U test.				

The larger increase in South Bristol in comparison to other areas translated into an increase of between eight and 24 deliberate primary fires of all kinds each year.

<b>Table C4: Expected number of deliberate primary fires in South Bristol (April 2001 to March 2002), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	942	958
Actual level	966	966
<b>Difference</b>	<b>+24</b>	<b>+8</b>

As with deliberate primary vehicle fires, these findings are influenced by the choice of a standard single year comparison. The second post intervention year showed quite different results, with between 105 and 359 fewer deliberate primary fires than expected.

## SUMMING UP THE IMPACT

The Car Clear scheme in South Bristol would appear to have produced mixed results, depending on the time period selected for analysis.

- Deliberate primary vehicle fires witnessed somewhere between an increase of 21 and a reduction of six fires on expected levels, based on a one year post intervention period.
- The second year of intervention witnessed a reduction of between -33 and -394 deliberate primary vehicle fires on expected levels.
- Deliberate fires of all kinds increased by between eight and 24 incidents on expected levels, based on one year post intervention analysis.
- Deliberate fires of all kinds witnessed between -105 and -359 incidents in the second year of intervention.

# Impact Analysis 2: Avon Car Clear in the Rest of Avon

## OUTCOME DATA USED

The outcome data used to assess the impact of the Avon Car Clear project in the Rest of Avon consisted of the raw data on all fires recorded by the brigade between April 2000 and December 2003. This data set consisted of 32,656 records and included both FDR1 and FDR3 fires.

## ANALYSIS OF IMPACT

The approach taken to analysing impact was to focus on deliberate vehicle fires as this was the problem that the Avon Car Clear Project set out to address. After being piloted in the South Bristol area, this was rolled out to the rest of the Avon area.

### *Deliberate primary vehicle fires*

Figure C3 shows the trends in deliberate primary vehicle fires, all deliberate primary fires and all fires in the Avon area (minus South Bristol) between April 2000 and December 2003. These figures were smoothed using a three point moving average and indexed on May 2000, in order to allow easier comparison between types of fire.

Deliberate primary vehicle fires generally followed a similar pattern to that for all deliberate primary fires, although the increase in the autumn of 2001 was faster for deliberate vehicle fires. Following the introduction of the Car Clear scheme, the two trends once again converged.

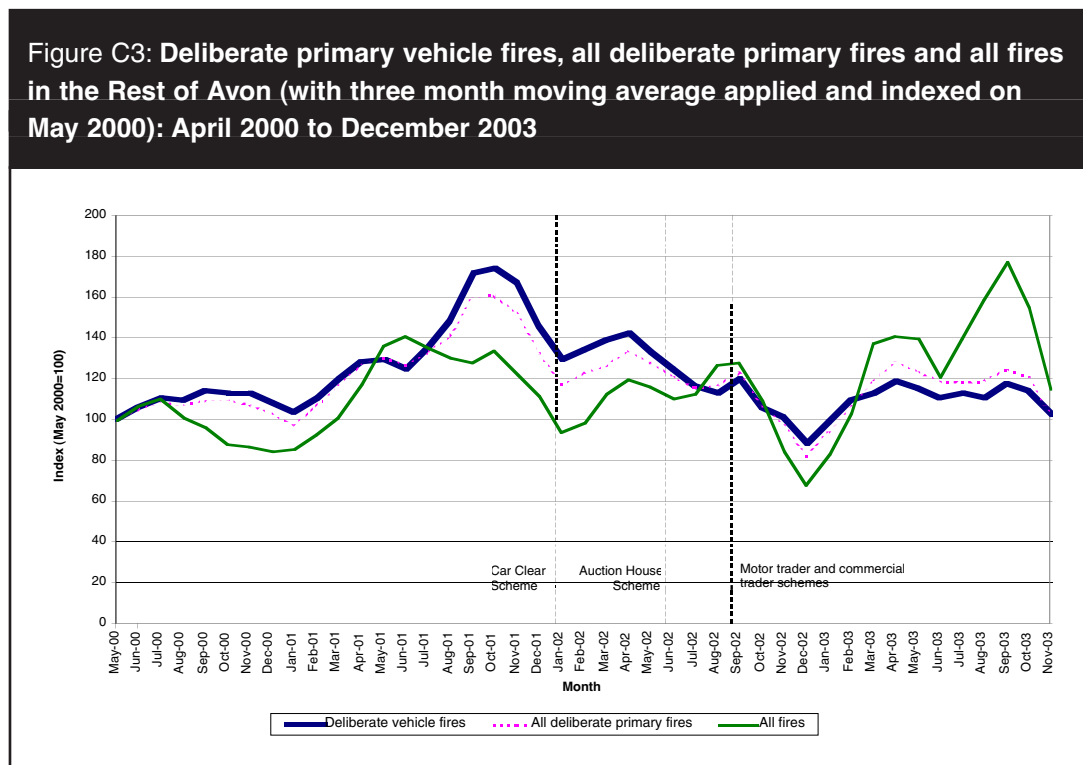


Figure C4 compares the trend in deliberate primary vehicle fires observed in the rest of Avon with three comparison areas – Humberside, the Brigade Family and England and

Wales. The chart shows that, during 2001, in the Rest of Avon deliberate primary vehicle fires rose at a faster rate than in the three comparison areas, peaking in the autumn of 2001. The levels then declined to match the trend in both the Brigade Family and England and Wales in the autumn of 2002 / spring 2003. By contrast, Humberside showed a steady increase over the entire period.

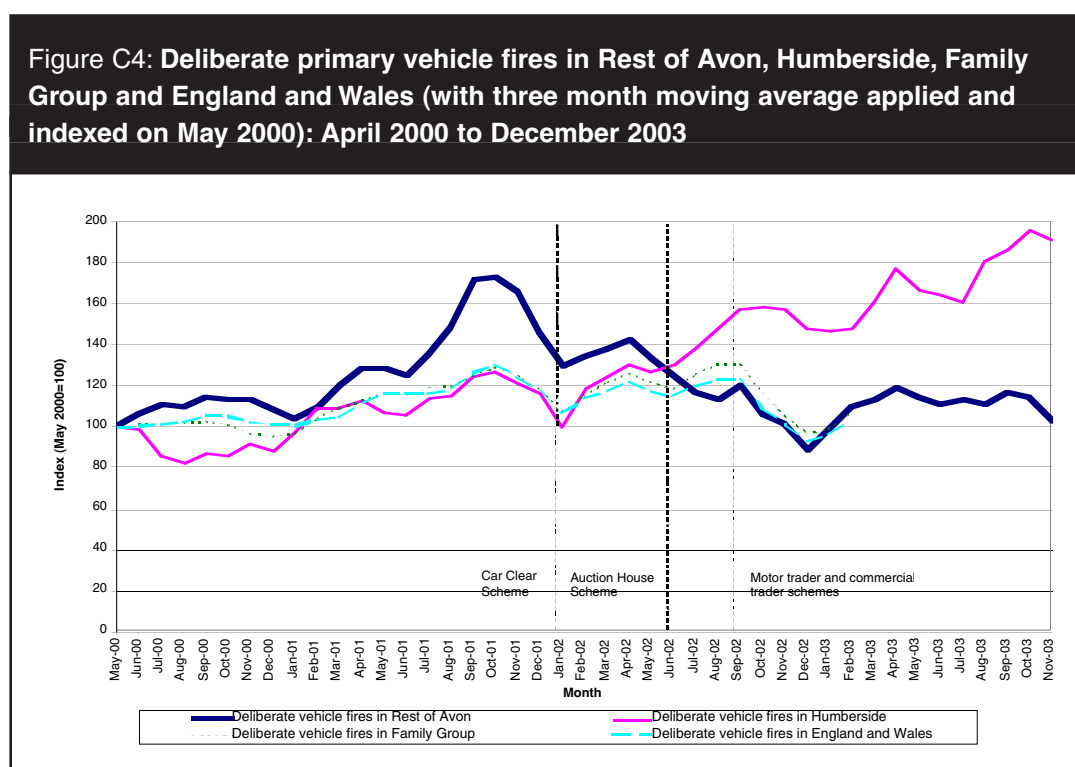


Table C5 shows that, following the introduction of the Avon Car Clear scheme in the rest of Avon, deliberate vehicle fires declined by 13% (although not significant). Over the same period, Humberside witnessed a (statistically significant) rise of 22%. The Brigade Family and England and Wales saw minor fluctuations of two percent and minus two percent respectively (neither statistically significant).

**Table C5: Number of deliberate primary vehicle fires in Rest of Avon, Humberside, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Jan 01 to Dec 01	Jan 02 to Dec 02		
Rest of Bristol	1,800	1,566	-13	ns
Humberside	1,370	1,672	+22	**
Family Group	22,725	23,077	+2	ns
England & Wales	72,205	70,923	-2	ns

\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C6 shows the scale of reductions estimated to have resulted from the scheme in the Rest of Avon. Based on the national comparison, there were 198 fewer deliberate primary vehicle fires than might have been expected. Based on the comparison to Humberside, however, there were 630 fewer incidents.

**Table C6: Expected number of deliberate vehicle fires in Rest of Avon (January 2002 to December 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	1,764	2,196
Actual level	1,566	1,566
<b>Difference</b>	<b>-198</b>	<b>-630</b>

### ***Deliberate primary fires***

Table C7 shows that the rest of Avon saw a 12% reduction in deliberate fires of all kinds (although not significant). This was greater than the reductions observed in all three comparison areas.

**Table C7: Number of deliberate primary fires of all kinds in Rest of Avon, Humberside, Family Group and England and Wales**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Jan 01 to Dec 01	Jan 02 to Dec 02		
Rest of Bristol	2,382	2,087	-12	ns
Humberside	2,252	2,619	+16	*
Family Group	34,346	34,035	-1	ns
England & Wales	109,953	105,426	-4	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

Table C8 shows the estimate of how much impact the Car Clear scheme may have had on deliberate primary fires overall. This suggests that, compared to England and Wales (the lowest impact estimate) there were 200 fewer deliberate fires of all kinds. However, compared to Humberside, there were estimated to be 676 fewer fires.

**Table C8: Expected number of deliberate primary fires in Rest of Avon (January 2002 to December 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	2287	2763
Actual level	2087	2087
<b>Difference</b>	<b>-200</b>	<b>-676</b>

## **SUMMING UP THE IMPACT**

Based on this analysis, the Car Clear scheme in the Rest of Avon (minus South Bristol) would appear to have shown positive results.

- Deliberate primary vehicle fires declined by 13% in the post intervention year, suggesting a reduction of between -198 and -630 fires per year on expected levels.
- Deliberate primary fires of all kinds declined by 12% in the post intervention year and it was estimated that this resulted in a reduction of between -200 and -676 fires per year on expected levels.



## Impact Analysis 3: Bedfordshire and Luton Arson Task Force

### OUTCOME DATA USED

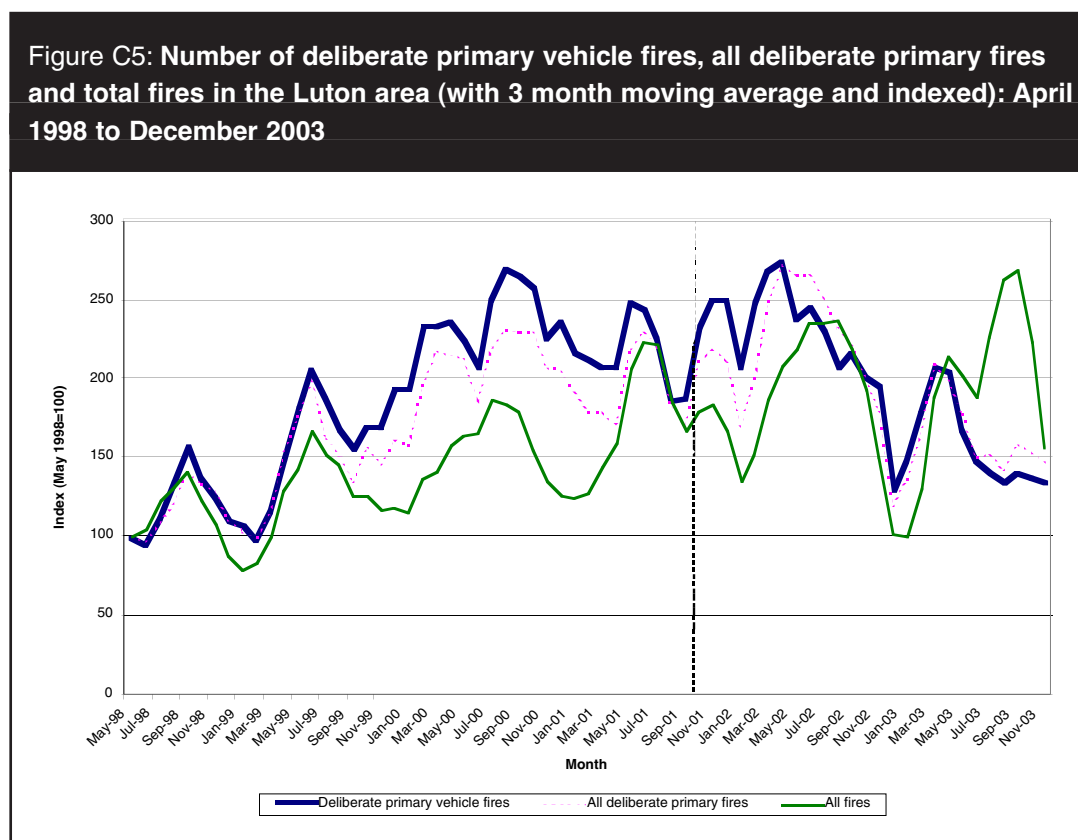
The outcome data used to assess the impact of the Luton Arson Task Force consisted of monthly aggregated totals, broken down by primary and secondary and by cause (accidental / deliberate) between April 1998 and December 2003.

### ANALYSIS OF IMPACT

The analysis presented here, concentrates on deliberate vehicle fires and deliberate outdoor refuse fires, as these were the main types of fire tackled by the Luton Arson Task Force.

#### *Deliberate primary vehicle fires*

Figure C5 shows that deliberate vehicle fires experienced a steady increase between 1998 and 2001. When the project commenced in November 2001, deliberate vehicle fires continued to increase, probably due to an initial start up phase. From April 2002, deliberate vehicle fires declined, although this mirrored a similar trend in deliberate fires of all kinds. By contrast, the second half of 2003 saw an increase in fires in general.



Comparisons were made with the rest of Bedfordshire, Reading (which was in the same Home Office Crime and Disorder Reduction Partnership family), the Brigade Family Group and with England and Wales. Figures for the family group and for England and Wales were only available up to March 2003. The results presented in Figure C6 show that the trend in Luton was very similar to those observed in the rest of

Bedfordshire, the Family Group and England and Wales. By contrast, Reading experienced a large increase in early 2001 (during which the level of deliberate primary vehicle fires trebled) and the subsequent steady decline was probably a response to this earlier increase.

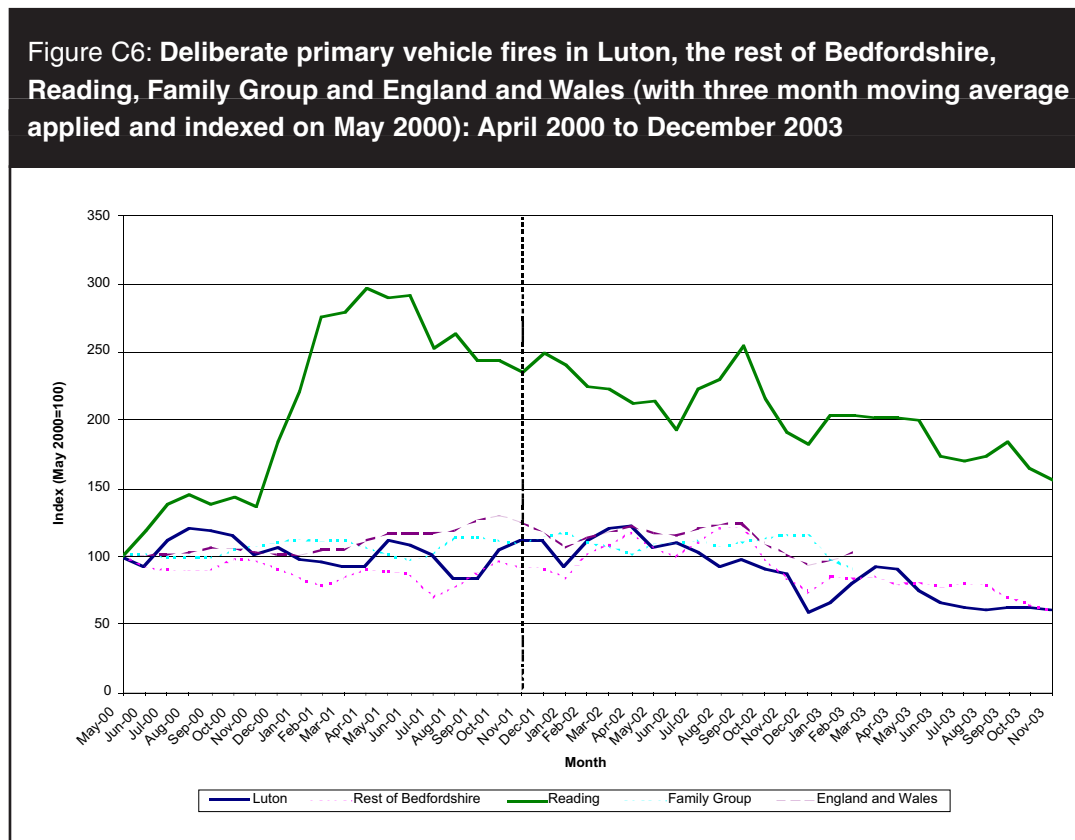


Table C9 shows that Luton experienced a 12% increase in deliberate primary vehicle fires (although not significant) following the start of intervention. By contrast, the Family Group and England and Wales saw smaller increases, while Reading witnessed a reduction. However, the rise was lower than in the rest of Bedfordshire, which rose by over a fifth in the following year.

**Table C9: Number of deliberate primary vehicle fires in Luton, the rest of Bedfordshire, Reading, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Nov 00 to Oct 01	<i>Post intervention</i> Nov 01 to Oct 02	<i>Percentage change</i>	<i>Significance</i>
Luton	438	490	12	ns
Rest of Bedfordshire	498	602	21	*
Reading	850	782	-8	**
Family Group	9,375	9,553	2	ns
England & Wales	69,921	73,754	5	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C10 provides an estimate of the scale of reduction as a result of the Luton scheme after one year. The lowest impact estimate, based on comparisons to Reading, suggests

that there were 87 additional deliberate vehicle fires, while the highest estimate (compared to the rest of Bedfordshire) suggests there were 40 fewer incidents.

**Table C10: Expected number of deliberate primary vehicle fires in Luton (November 2001 to October 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	403	530
Actual level	490	490
<b>Difference</b>	<b>+87</b>	<b>-40</b>

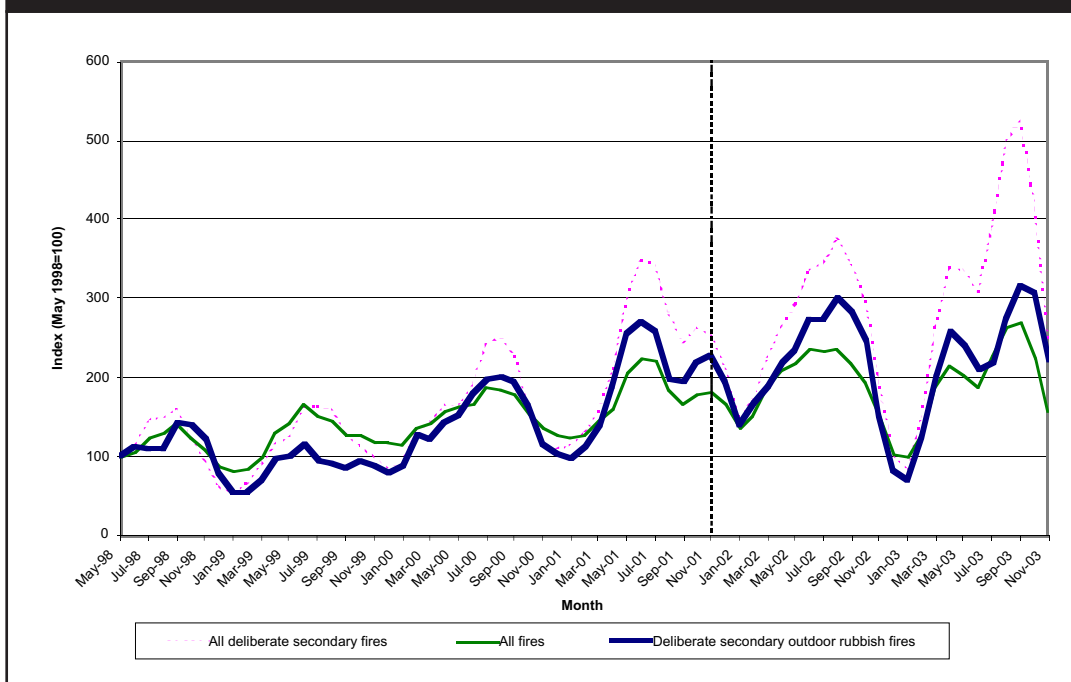
While the impact was missed over one year, Figure E6 suggests that there was a 29% reduction in the second year (compared to the pre intervention year). Comparisons were available for Reading and the rest of Bedfordshire in the second year. These suggested that the lowest impact (in comparison to Reading) resulted in 11 fewer deliberate vehicle fires and the highest impact estimate (in comparison to the Rest of Bedfordshire) was a reduction of 68 deliberate vehicle fires.

### ***Deliberate refuse fires***

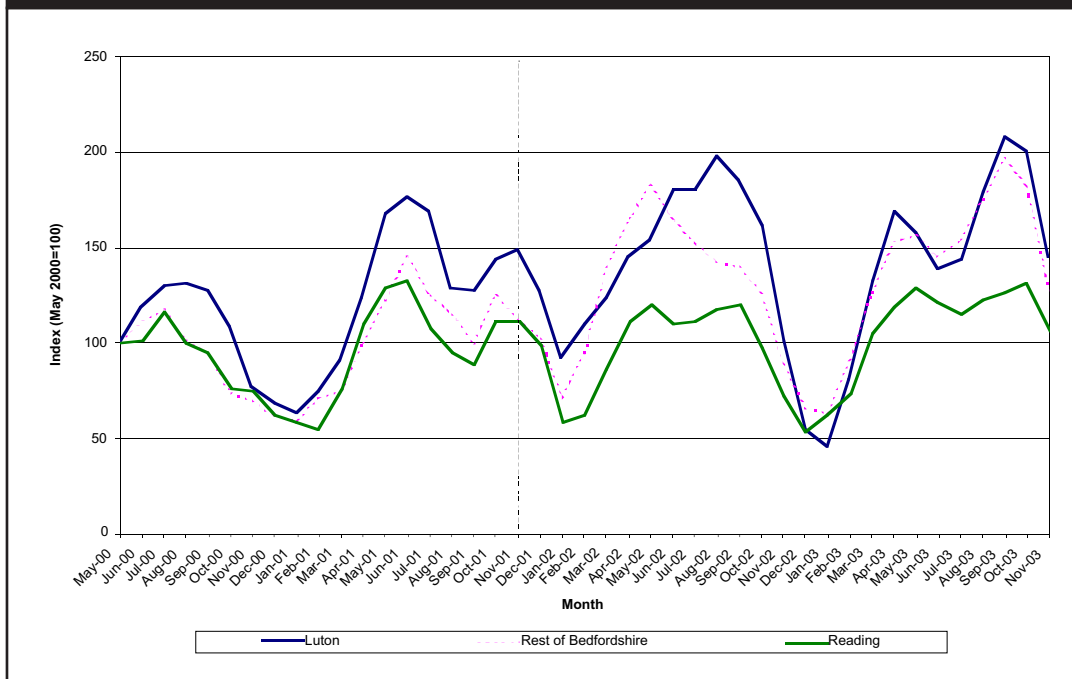
Analysis of deliberate refuse fires in Figure C7 shows that there was a steady increase in Luton from April 1998 onwards, with a clear seasonal pattern of peaks in summer and troughs in winter.

Deliberate secondary fires in general also exhibited this seasonal pattern, but the magnitude of the peaks in summer increased year on year.

**Figure C7: Number of deliberate secondary refuse fires, all deliberate secondary fires and total fires in the Luton area (with 3 month moving average and indexed): April 1998 to December 2003**



**Figure C8: Deliberate secondary refuse fires in Luton, the rest of Bedfordshire, and Reading (with three month moving average applied and indexed on May 2000): April 2000 to December 2003<sup>41</sup>**



When compared to the rest of Bedfordshire and Reading, Figure C8 shows that deliberate refuse fires began to follow a similar pattern to the rest of the county after the introduction of the scheme. However, the gap between Reading and Luton appeared to increase following the start of the scheme, due largely to the increases observed in Luton.

**Table C11: Number of deliberate secondary refuse fires in Luton, the rest of Bedfordshire and Reading pre / post intervention**

	<i>Pre intervention</i> Nov 00 to Oct 01	<i>Post intervention</i> Nov 01 to Oct 02	<i>Percentage change</i>	<i>Significance</i>
Luton	446	593	+33	ns
Rest of Bedfordshire	466	667	+43	ns
Reading	703	872	+24	ns

Table C11 shows that deliberate refuse fires in Luton grew at a faster rate than in Reading, but slower than the rest of the county. Overall this created a mixed picture in terms of impact. Compared to Reading, there were 40 more deliberate refuse fires than expected in Luton. Compared to the rest of Bedfordshire, there were 45 fewer deliberate refuse fires.

<sup>41</sup> Note that no comparisons can be made with deliberate secondary fires nationally or in family groups because ODPM does not publish these data.

**Table C12: Expected number of deliberate secondary refuse fires in Luton (November 2001 and October 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	553	638
Actual level	593	593
<b>Difference</b>	<b>+40</b>	<b>-45</b>

### ***Deliberate primary fires***

Table C13 shows the changes in total deliberate fires pre / post intervention. In the year following the introduction of the project, deliberate primary fires in Luton rose by 21%. This increase was larger than in Reading, the Family Group or England and Wales, but slightly smaller than in the rest of the county.

**Table C13: Number of deliberate primary fires of all kinds in Luton, rest of Bedfordshire, Reading, Family Group and England and Wales**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Nov 00 to Oct 01	Nov 01 to Oct 02		
Luton	588	709	+21	ns
Rest of Bedfordshire	643	797	+24	**
Reading	1,117	1,291	+16	ns
Family Group	14,333	14,395	0	ns
England & Wales	106,330	110,257	+4	ns

\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

This presented a mixed picture in terms of estimated impact, with a range of between +121 deliberate primary fires (when compared to the Family Group) and –20 fires in comparison to the rest of the county (see table C14).

**Table C14: Expected number of deliberate primary fires in Luton (November 2001 and October 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	588	729
Actual level	709	709
<b>Difference</b>	<b>+121</b>	<b>-20</b>

As with deliberate vehicle fires, the impact would appear to have increased in the second year. Although comparisons were only available for Reading and the rest of the county, the second year would appear to have resulted in an impact of between -135 and -140 deliberate primary fires.

## **SUMMING UP THE IMPACT**

The analysis of impact in Luton presents a mixed picture:

- After one year of intervention, deliberate primary vehicle fires in Luton grew by 12% and resulted in an impact of between +87 and -40 incidents on expected levels.
- Analysis after two years showed that deliberate vehicle fires declined by 29% in the second year (compared to the pre intervention year), resulting in between 11 and 68 fewer fires.
- Deliberate refuse fires increased by 33% in the year following intervention. This presented a mixed picture, with somewhere between an additional 40 fires and 45 fewer fires. The trend, however continued in an upwards direction in year two.
- Deliberate primary fires of all kinds rose by 21% in Luton after one year, resulting in an impact of between an additional 121 fires and 20 fewer incidents, once comparisons with other areas were made.
- A second year of analysis of deliberate primary fires of all kinds showed a more positive result, with a 19% reduction in such incidents, giving an impact of between -135 and -140 deliberate primary fires.

## Impact Analysis 4: Cheshire Arson Task Force and Police Liaison Officer

### OUTCOME DATA USED

The main outcome data used for this project are deliberate primary fires, deliberate primary vehicle fires and all fires across Cheshire.

### ANALYSIS OF IMPACT

The project in Cheshire was based around developing an arson task force and closer working relationships with the police. The main project activity was related to the reduction of deliberate fires and concentrated upon vehicle fires. The outcomes, therefore, relate to all deliberate primary fires and deliberate primary vehicle fires across the brigade and deliberate primary vehicle fires in a key targeted area - Ellesmere Port.

#### *Deliberate primary vehicle fires*

The Arson Task Force began to implement interventions to reduce primary deliberate vehicle fires in September 2001. Therefore, the impact analysis begins by considering the number of deliberate primary vehicle fires, deliberate primary fires and all fires across Cheshire. This is presented in figure C9, where the data are indexed and the dotted line denotes the beginning of the project.

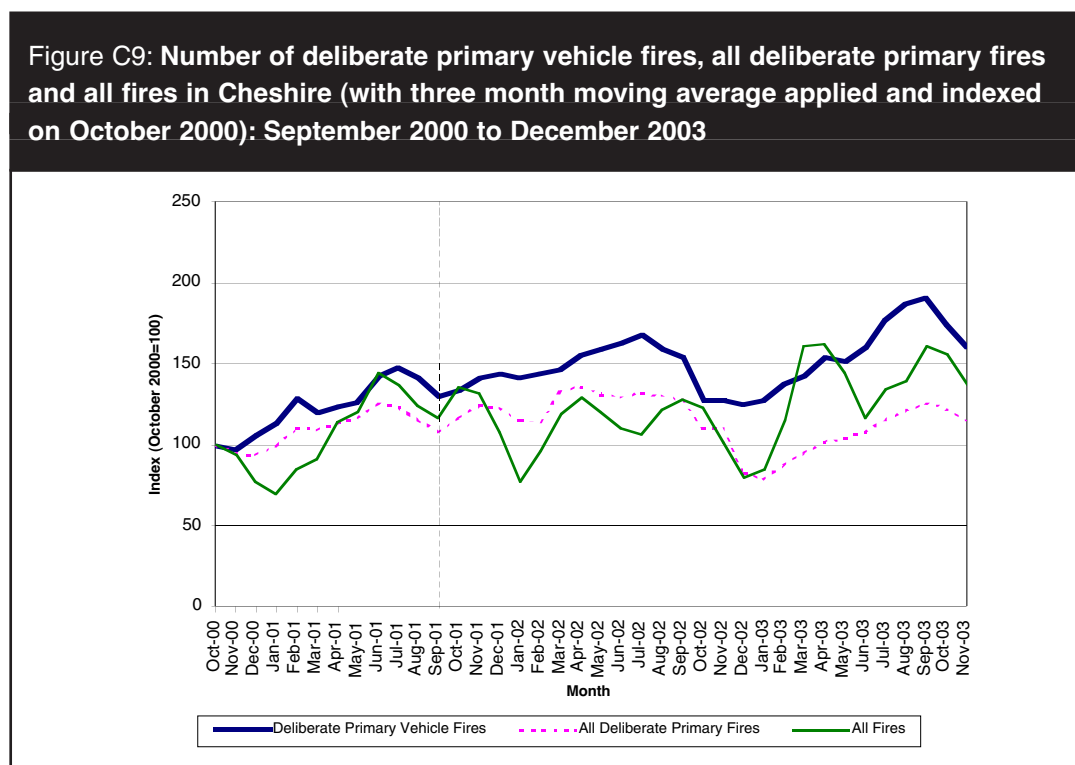


Figure C9 shows that in the months preceding the start of the project the number of deliberate primary fires, deliberate primary vehicle fires and all fires across the brigade steadily rose. After the start of the project, there were still gradual increases in primary

deliberate vehicles fires and all fires across the brigade, though slight falls are observed in all deliberate primary fires.

Figure C10 considers the overall pattern of deliberate primary vehicle fires as compared to the comparison areas of Nottinghamshire, the brigade family group and England and Wales for the period September 2000 to December 2003.

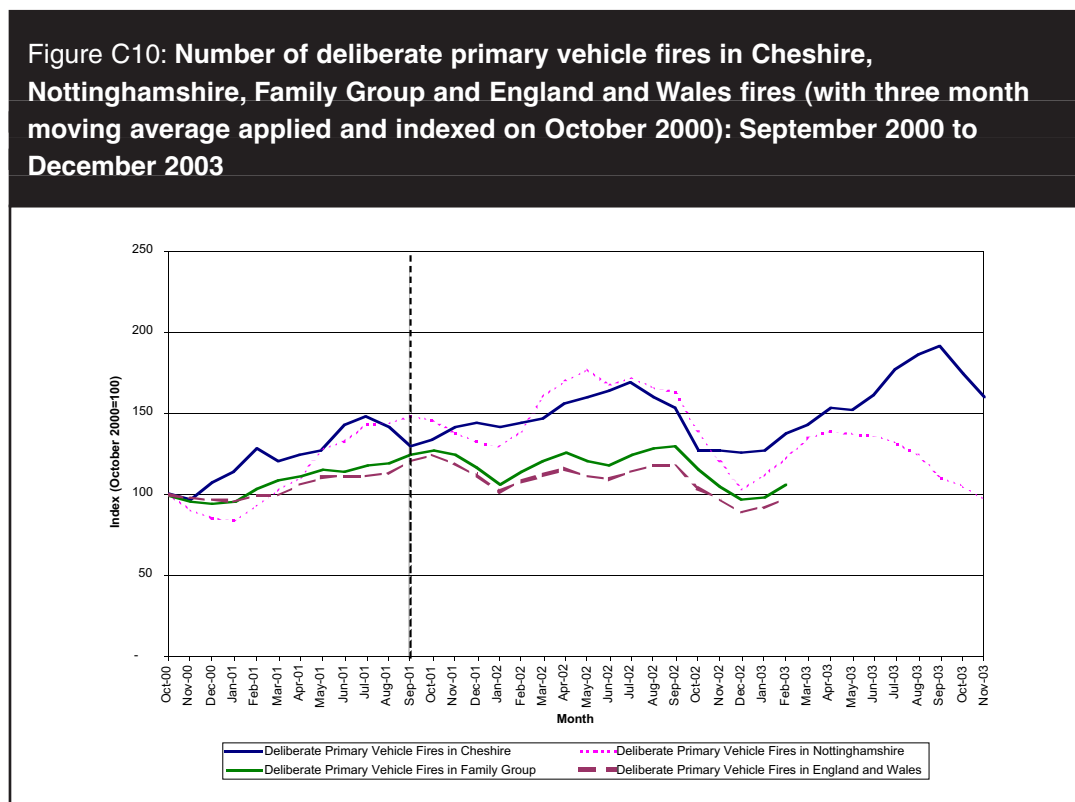


Figure C10 (above) shows that there are close similarities between the overall trends in Cheshire and in the comparison groups. From October 2000 there are general rises in deliberate primary vehicle fires, which begin to fall around August 2002.

Table C15 presents the actual number of deliberate primary vehicle fires and shows that there were rises in Cheshire and for all comparisons groups during the first year of the project (September 2001 to August 2002). In Cheshire there was a 23% rise in such fires (statistically significant), but there was also a rise of 41% in Nottinghamshire, 14% in the family group and 11% in England and Wales (these are all also statistically significant).

**Table C15: Number of deliberate primary vehicle fires in Cheshire, Nottinghamshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Sep 00 – Aug 01	<i>Post Intervention</i> Sep 01 – Aug 02	<i>Percentage change</i>	<i>Significance</i>
Cheshire	797	982	+23	**
Nottinghamshire	2,277	3,216	+41	**
Family Group	20,962	23,841	+14	**
England & Wales	67,449	74,560	+11	*

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.



The evidence suggests that the project had little impact upon reducing deliberate primary vehicle fires in the first year of the project. If the project area had similar rises to those observed in Nottinghamshire (the comparison group with the largest rise) there would have been a 41% increase in deliberate primary vehicle fires, or 142 fewer fires than the actual number (see table C16 - below). If the area had similar rises to England and Wales (the comparison site with the smallest increase at 11%) there would have been 885 fires 97 fewer than the actual number recorded.

**Table C16: Expected number of deliberate primary vehicle fires in Cheshire (September 2001 to August 2002), the actual level and difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	885	1,124
Actual level	982	982
<b>Difference</b>	<b>+97</b>	<b>-142</b>

### ***Deliberate primary vehicle fires in Ellesmere port***

The data from across the brigade shows an increase in primary deliberate vehicle fires for the first year of the project. However, one of the main aims of the project was tackle vehicle arson across Ellesmere Port and Chester. In September 2002, 'Project Autocrime' was launched in these areas. This involved a range of activities, including the removal of untaxed and unlicensed vehicles, interventions to increase public awareness of vehicle theft and arson, safety days in car parks and environmental improvements. For this report data only data on Ellesmere Port were available and analysed.

Figure C11 outlines the number of deliberate primary vehicle fires, deliberate primary fires and all fires in Ellesmere Port. The dotted line denotes when the intervention began.

**Figure C11: Number of deliberate primary vehicle fires, deliberate primary fires and all fires in Ellesmere Port (with three month moving average applied and indexed on October 2000): September 2000 to December 2003**

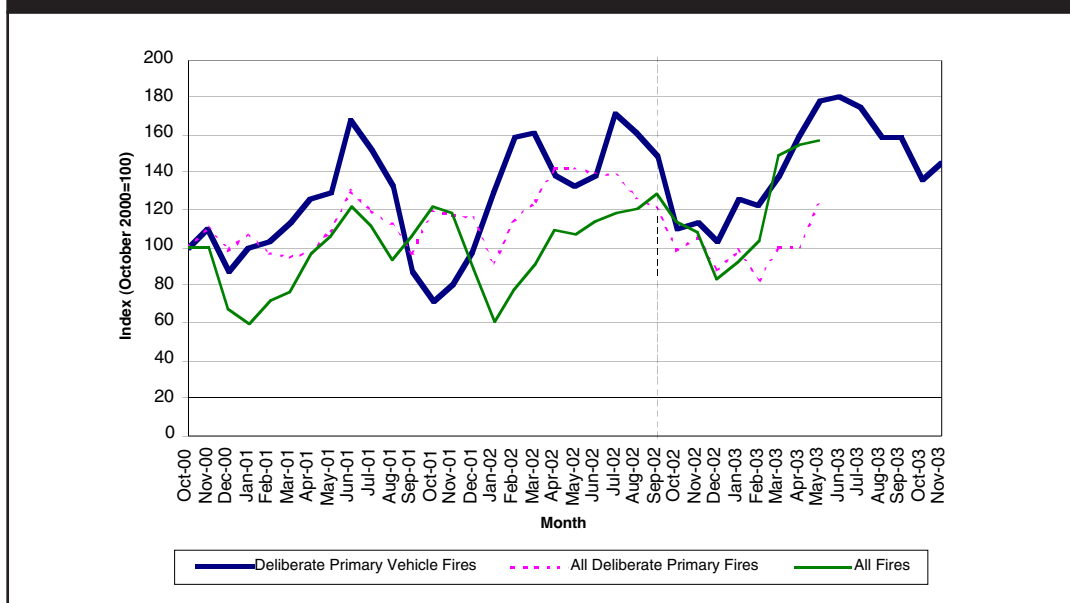
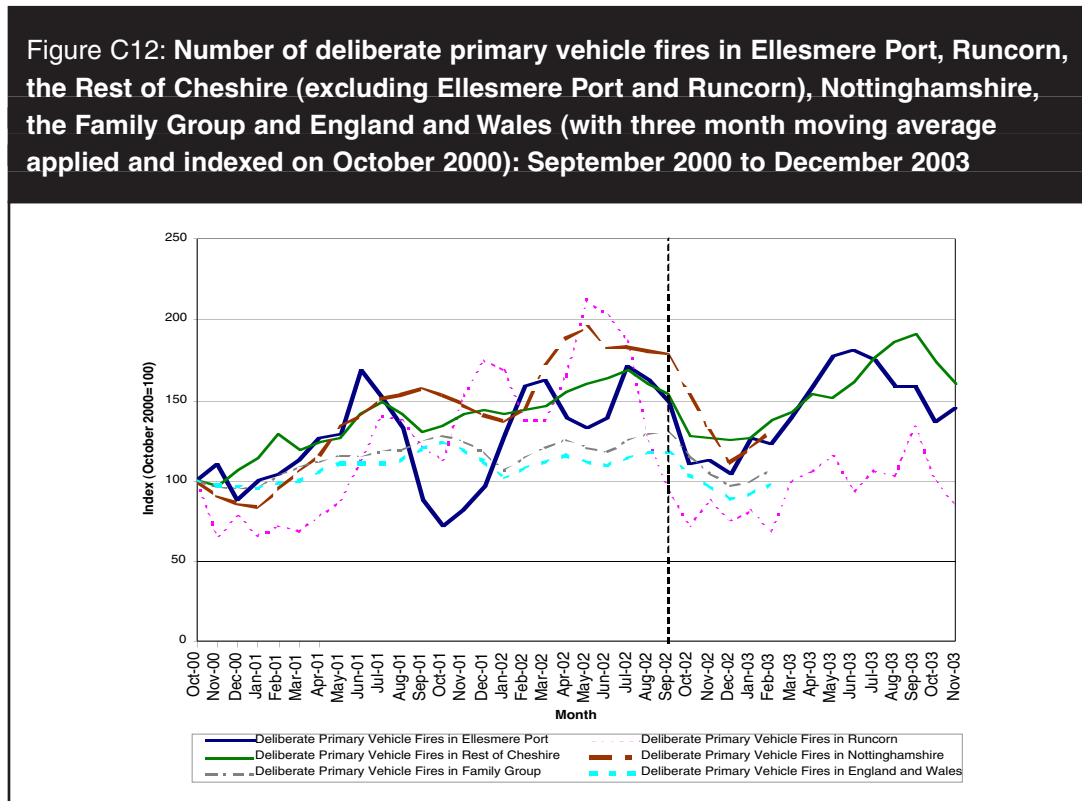


Figure C11 shows that the overall trend for deliberate primary vehicle fires in Ellesmere Port appears to decrease after the start of intervention and then increase after December 2002. All deliberate primary fires have been more consistent over the period and all fires have shown a slight increase.



When the pattern is compared to Runcorn, the rest of the brigade (excluding Ellesmere Port and Runcorn), Nottinghamshire, the family group and England and Wales (see Figure C12 - above) it appears that the overall trend in all areas is downwards after September 2002 (the start of the intervention), though there are general increases after December 2002.

The actual number of deliberate primary vehicle fires in Ellesmere Port and Runcorn is presented in Table C17. The table presents data for the seven-month period before intervention (September 2001 to March 2002) and for the same seven months of the subsequent year (September 2002 to March 2003) as comparison data are not available after March 2003.

The table shows an increase in the number of deliberate primary vehicle fires in Ellesmere Port (7%) and in the rest of Cheshire (2%). In Runcorn there was a rapid rate of decrease in deliberate vehicles fires of 44% (which is statistically significant). There were also falls in Nottinghamshire, the family group area and England and Wales.

**Table C17: Deliberate primary vehicle fires in Ellesmere Port compared to Runcorn, Rest of Cheshire (this is minus the figures for Ellesmere port and Runcorn), Nottinghamshire, Family Group and England and Wales pre/post intervention**

	<i>Pre intervention</i> Sept 01-Mar 02	<i>Post intervention</i> Sept 02- Mar 03	<i>Percentage change</i>	<i>Significance</i>
Ellesmere Port	81	87	+7	ns
Runcorn	102	57	-44	*
Rest of Cheshire	370	364	+2	ns
Nottinghamshire	1,909	1,785	-6	ns
Family Group	13,680	12,568	-8	ns
England & Wales	43,581	38,245	-12	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

If we make an estimate of the expected number of deliberate primary vehicle fires in the impact area (shown in Table C18), we see that the lowest impact suggests that had Ellesmere Port followed the pattern for Nottinghamshire there would have been 85 primary deliberate vehicle fires in the areas which is two less than the actual total. If the pattern had followed that of Runcorn, there would have been 43 deliberate primary vehicle fires which is 44 less than the actual number recorded.

**Table C18: Expected number of primary deliberate vehicle fires in Ellesmere Port (September 2002 to March 2003), the actual number of difference between them.**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected	43	85
Actual	87	87
<b>Difference</b>	<b>+44</b>	<b>+2</b>

### ***Deliberate primary fires***

The data for deliberate primary fires in Cheshire is compared to a comparison area (Nottinghamshire), the family group and to England and Wales for the period September 2000 to August 2001 (the pre-project period) as against the same period for the first year of the project in Table C19.

**Table C19: Number of deliberate primary fires in Cheshire, Nottinghamshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Sep 00 – Aug 01	<i>Post intervention</i> Sep 01 – Aug 02	<i>Percentage change</i>	<i>Significance</i>
Cheshire	1,394	1,606	+15	*
Nottinghamshire	3,155	4,342	+38	**
Family Group	31,932	35,422	+11	ns
England & Wales	102,868	110,925	+8	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C19 shows an increase in deliberate primary fires in Cheshire for the comparison period of 15% (which is statistically significant). There were however, also increases in Nottinghamshire (38% - also statistically significant), the family group and for England and Wales.

By using this data we are able to make an estimate of the impact of project on the number of deliberate primary fires in Cheshire (see Table C20 - below). This suggests that had the pattern in Cheshire followed that of Nottinghamshire, increasing by 38%, there would have been 318 *more* primary deliberate fires over the comparison period. However, had the pattern followed that for England and Wales, increasing by just 8%, there would have been 101 fewer primary deliberate fires. It should be noted here that in the second year of the project the number of deliberate primary fires fell by 16% to 1,344.

<b>Table C20: Expected number of deliberate primary fires in Cheshire (September 2001 to August 2002), the actual level and difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	1,505	1,924
Actual level	1,606	1,606
<b>Difference</b>	<b>+101</b>	<b>-318</b>

### **SUMMING UP THE IMPACT.**

In summary, the data presented here suggests that:

- There were rises in deliberate primary fires overall in the brigade in the first year of the project, though a fall of 16% in the second year.
- There were rises in the number of deliberate primary vehicle fires across the brigade from the start of the project in September 2001. In Ellesmere Port (which was later a main targeted impact area) there was an increase in such fires between September 2002 to March 2003.

## Impact Analysis 5: Cumbria Rural Arson Audits

### OUTCOME DATA USED

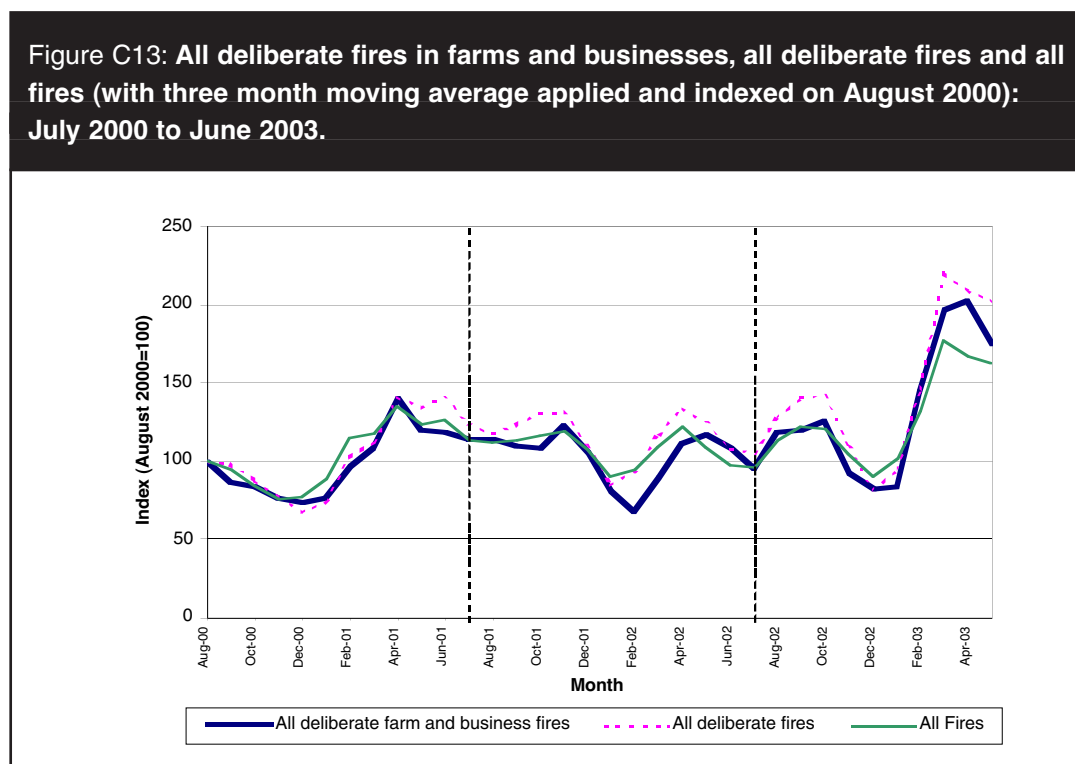
The Cumbria project was based around conducting fire safety audits with farms and business cross Cumbria. The project began in July 2001 and finished 12 months later. The outcome data used here consists of all fires, all primary and secondary deliberate fires and primary and secondary deliberate fires in farms and business across Cumbria. There are no comparisons made due to the unusual nature of the project and the lack of data collected on the specific fire type it addresses.

### ANALYSIS OF IMPACT

Analysis of deliberate fires in farms and businesses is conducted as is additional analysis with fire data from business addresses that received arson audits from the fire service.

#### *Deliberate fires in farms and businesses*

Figure C13 presents data on all fires, all deliberate fires and all deliberate fires in farms and businesses across Cumbria from July 2000 (indexed on August 2000) – the dotted lines denote when the project began and when the project finished.



This highlights that the trend for deliberate fires in farms and businesses is closely related to the trend for all deliberate fires and all fires. The number of fires in farms and businesses appears fairly consistent during the project and there is a sharp increase in early 2003.

If the project had impacted on fires in farms and business it would be expected that there would be falls in fires in premises that were audited during the project. Analysis of impact was based on the number of addresses experiencing fires and the number of fires that occurred in those addresses that had received arson audits.

The number of fires in each farm/business was examined both before and after the intervention. However, the length of time pre and post intervention varies from address to address. The pre-implementation analysis was based on two-year priors to the start of the project. As the project took a year to complete, some addresses were examined over a three-year period. A similar issue holds for the post implementation period, with time ranging from less than a year to 22 months. To account for this, the analysis presented below standardises time periods by calculating the rates of fires per month per address both pre and post audit. This should have the effect of control for differing durations of pre and post periods.

Table C21 shows that the number of addresses experiencing fires fell following an audit from 28 to 22, although this is probably largely due to the post implementation period being shorter than the pre period. More importantly, the rate of fires per month for the 44 addresses experiencing a fire in the study period increased by 14%, although this is based on very low rates in the first instance.

<b>Table C21: Rates of fires per month pre and post audits: July 1999 to May 2003</b>			
	<i>Before audit</i>	<i>After audit</i>	<i>Percentage change</i>
Number of audited premises experiencing fires	28	22	
Number of fires per month	0.035	0.040	+14
<b>Concentration of fires (no. of fires / no. of premises experiencing fire)</b>	<b>0.0013</b>	<b>0.0018</b>	<b>+44</b>

### SUMMING UP THE IMPACT

Table C21 suggests that arson audits had no impact on the farms and businesses who received the assistance. Here we see that:

- The number of fires in audited premises increased after the audit was conducted.
- The concentration of fires in premises that were audited increased after the audit period.

## Impact Analysis 6: Devon and Cornwall Arson Task Force

### OUTCOME DATA USED

The outcome data used to assess the impact of the Devon and Cornwall Arson Task Force consisted of monthly aggregated totals, broken down by primary and secondary and by cause (deliberate etc.).

### ANALYSIS OF IMPACT

Much of the work of the Devon and Cornwall ATF has focused on raising awareness of arson and on capacity building measures. There has also been a focus on improving the investigation and recording of fires and this may have increased the number of fires recorded as arson.

The Devon and Cornwall ATF have also taken measures to address deliberate vehicle and refuse fires and these are examined in the following pages. The analysis has examined Devon and Cornwall separately due to each having a different comparison area.

#### *Deliberate primary vehicle fires in Devon*

Figure C14 shows that, following the introduction of the Arson Task Force, deliberate vehicle fires continued to rise, peaking in April 2002, before falling for the rest of the year. In 2003, deliberate vehicle fires began to rise again. These levels were above those observed for all deliberate primary fires and for all fires.

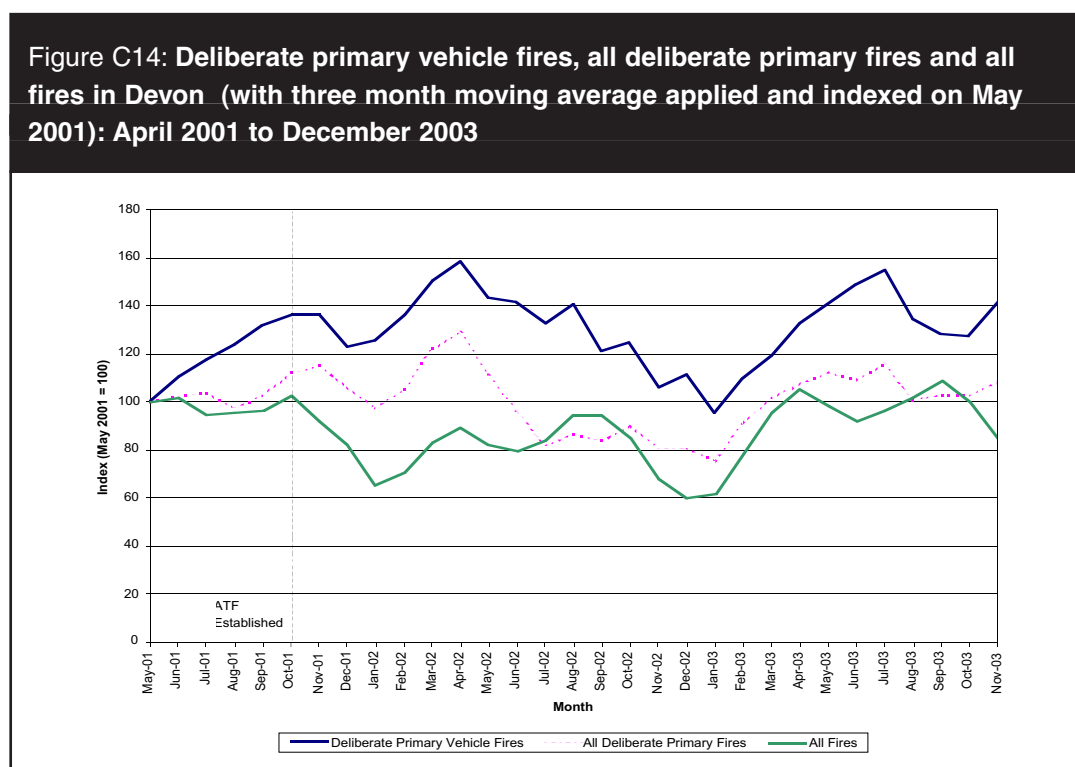


Figure C15 compares the trend in Devon with that of Lincolnshire, the Brigade Family Group and England and Wales. After an initial increase in Devon, the trend converged

with that of the comparison areas in late 2002 and continued to follow a similar trend to Lincolnshire through to the end of 2003.

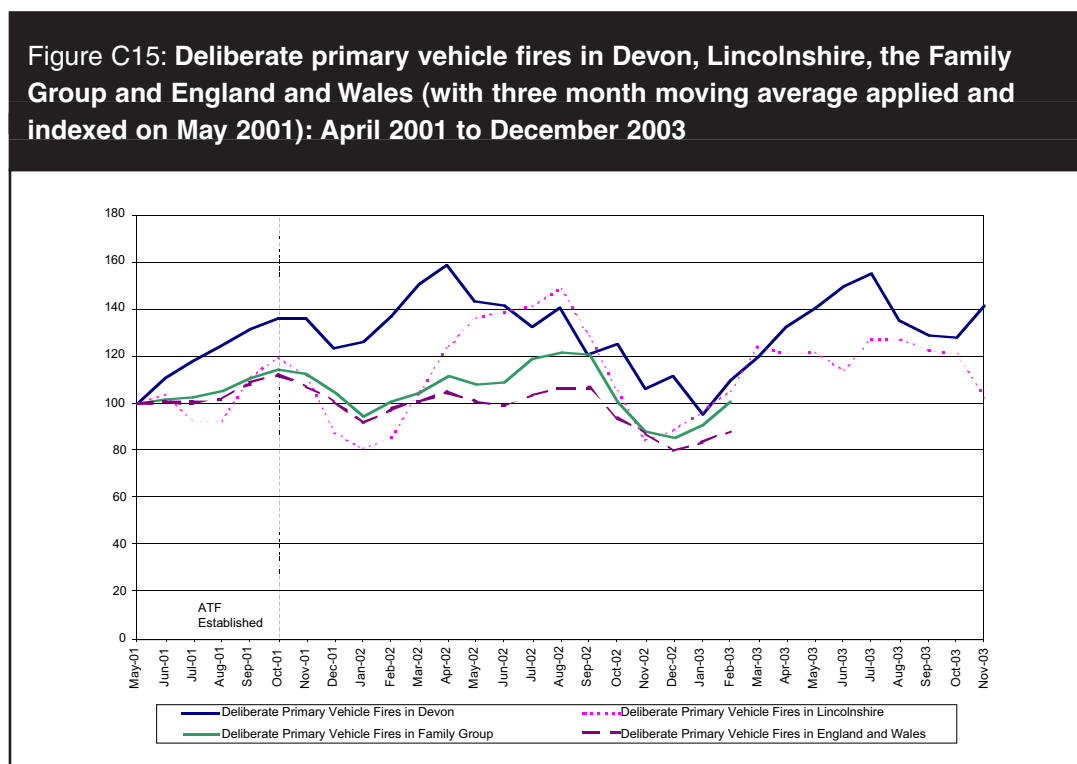


Table C22 compares a six-month pre intervention period (April to September 2001) with a similar six-month period following intervention in 2002. Over the six month period, Devon experienced a statistically significant rise of 27% in deliberate vehicle fires, compared to a 48% increase in Lincolnshire. Both the Family Group and England and Wales showed smaller increases.

**Table C22: Number of deliberate primary vehicle fires in Devon, Lincolnshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Apr 01 to Sep 01	Apr 02 to Sep 02		
Devon	269	341	+27	*
Lincolnshire	248	368	+48	**
Family Group	2,293	2,573	+12	ns
England & Wales	36,564	37,461	+3	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

On this basis, Table C23 shows that the impact on deliberate vehicle fires was between an increase of 64 fires and a decrease of 57 fires over six months.



**Table C23: Expected number of deliberate primary vehicle fires in Devon (April 2002 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	277	398
Actual level	341	341
<b>Difference</b>	<b>+64</b>	<b>-57</b>

### *Deliberate primary vehicle fires in Cornwall*

A similar analysis of deliberate vehicle fires in Cornwall showed a seasonal pattern, with increases in the summertime. There was an increasing trend in deliberate primary vehicle fires that was greater than that for all deliberate fires, as shown by Figure C16. Data on total fires in Cornwall were only available up to March 2003.

**Figure C16: Deliberate primary vehicle fires, all deliberate primary fires and all fires in Cornwall (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

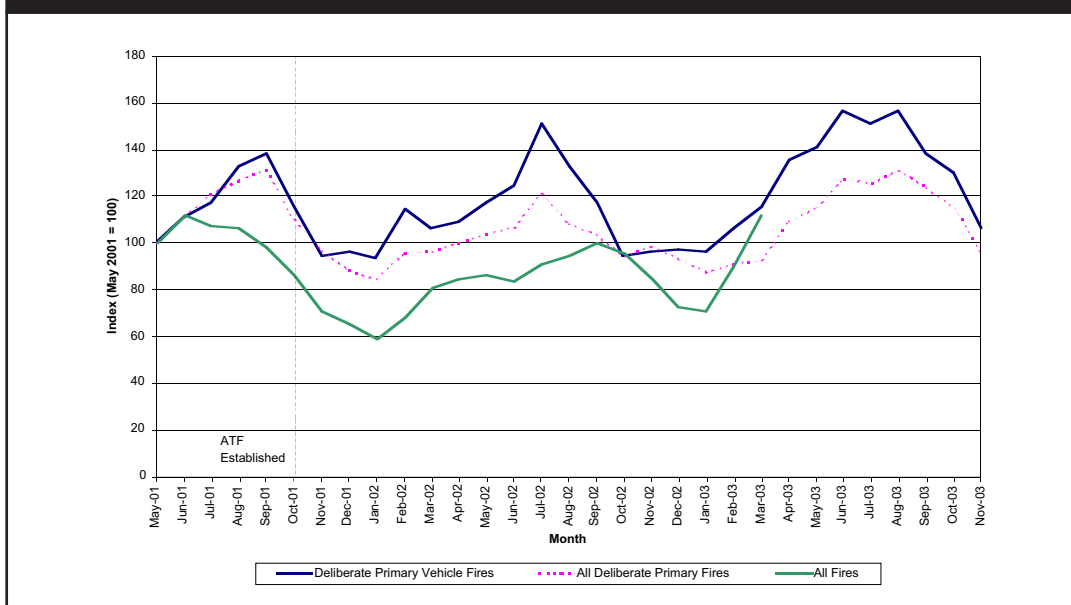


Figure C17 shows that the trend in Cornwall was more seasonal than in the comparison areas and meant that there tended to be convergence in winters and fluctuations in summer.

**Figure C17: Deliberate primary vehicle fires in Cornwall, Somerset, the Family Group and England and Wales (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

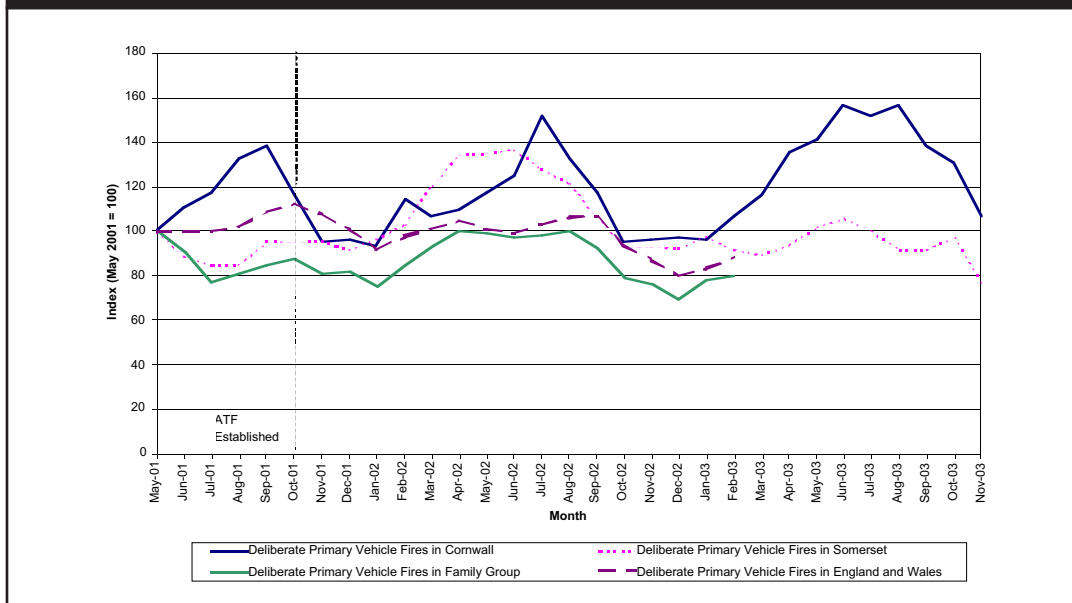


Table C24 shows that there was a small (non-significant) rise in deliberate vehicle fires in Cornwall between April and September 2002. While slightly greater than the increase in England and Wales, it was lower than the increase observed in Somerset (the comparison area) and the Family Group.

**Table C24: Number of deliberate primary vehicle fires in Cornwall, Somerset, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Apr 01 to Sep 01	<i>Post intervention</i> Apr 02 to Sep 02	<i>Percentage change</i>	<i>Significance</i>
Cornwall	177	190	+7	ns
Somerset	238	330	+39	**
Family Group	1,493	1,635	+10	ns
England & Wales	36,564	37,461	+3	ns

\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C25 shows that the lowest impact estimate (in comparison to England and Wales) suggests there were eight additional deliberate primary vehicle fires in Cornwall in the six-month post intervention period. The highest impact estimate (in comparison to Somerset) suggested there were 56 fewer deliberate primary vehicle fires in Cornwall over the six-month period.

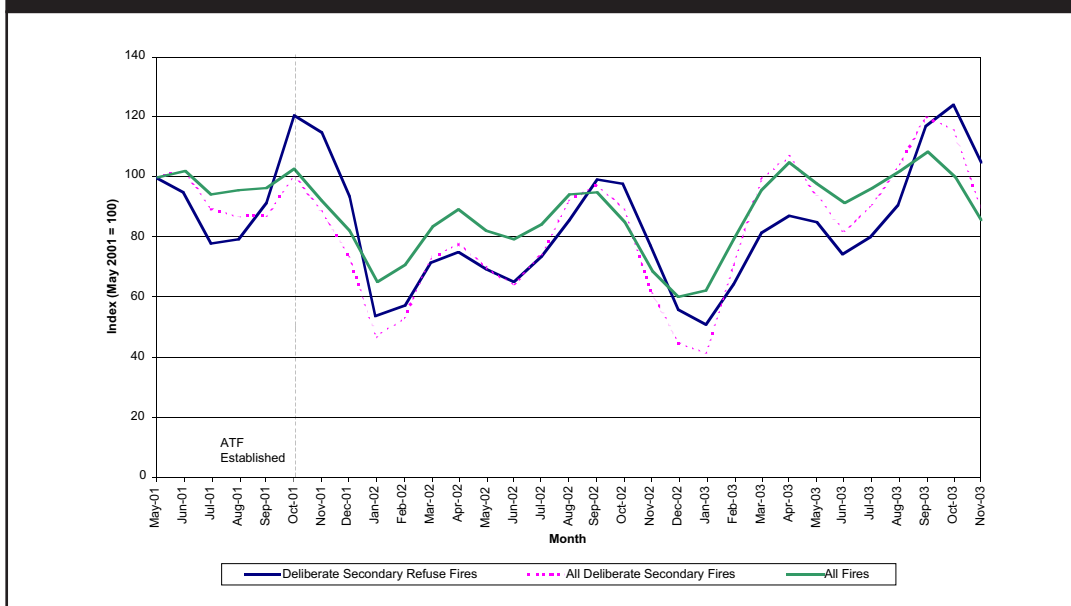
**Table C25: Expected number of deliberate primary vehicle fires in Cornwall (April 2002 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	182	246
Actual level	190	190
<b>Difference</b>	<b>+8</b>	<b>-56</b>

### *Deliberate refuse fires in Devon*

Figure C18 shows that, following the introduction of the Arson Task Force, secondary refuse fires in Devon dropped sharply, as did all deliberate secondary fires. For much of the period, deliberate secondary refuse fires followed the trend in all secondary deliberates, although during 2003, the level of refuse fires fell below that of all deliberate secondary fires.

**Figure C18: Deliberate secondary refuse fires, all deliberate secondary fires and all fires in Devon (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**



The only comparison available for Devon was Lincolnshire, which have a lower level of secondary refuse fires, but which showed a rising trend, resulting in an increasing gap between the two trends, as indicated by Figure C19.

**Figure C19: Deliberate secondary refuse fires in Devon and Lincolnshire (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

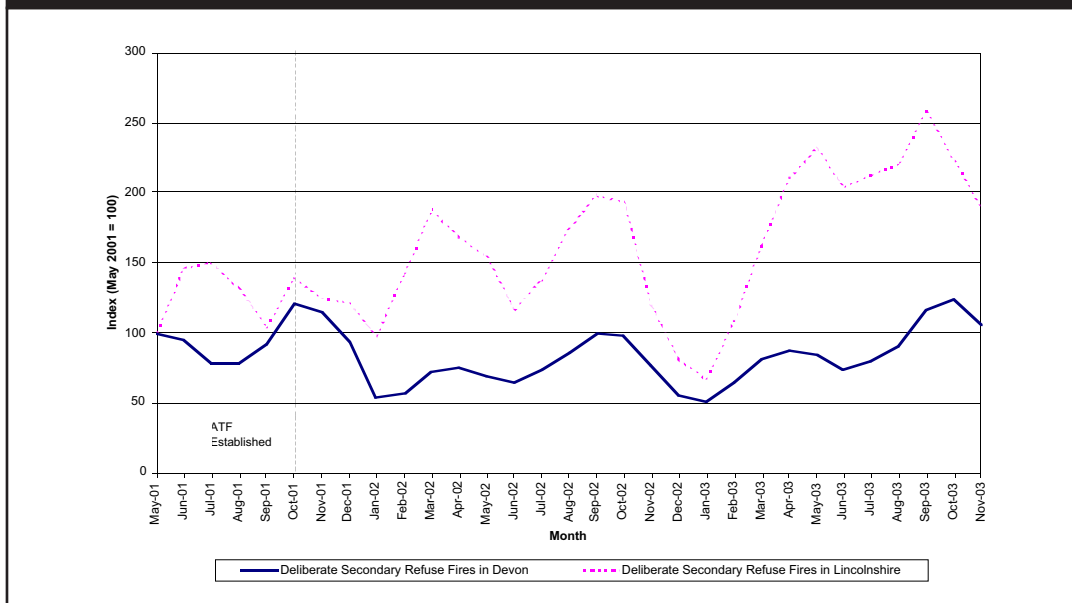


Table C26 shows that, over a six month period pre / post intervention, deliberate secondary refuse fires rose much faster in Lincolnshire than in Devon, with just an eight percent increase in the latter.

**Table C26: Number of deliberate secondary refuse fires in Devon and Lincolnshire pre / post intervention**

	<i>Pre intervention</i> Apr 01 to Sep 01	<i>Post intervention</i> Apr 02 to Sep 02	<i>Percentage change</i>	<i>Significance</i>
Devon	794	859	+8	ns
Lincolnshire	111	158	+42	ns

The slower increase in deliberate secondary fires in Devon translated into 269 fewer fires than expected.

**Table C27: Expected number of deliberate secondary refuse fires in Devon (April 2002 to September 2002), the actual level and the difference between them**

	<i>Impact estimate</i>
Expected level	1,128
Actual level	859
<b>Difference</b>	<b>-269</b>

***Deliberate refuse fires in Cornwall***

Figure C20 shows that, while deliberate refuse fires followed the trend for all deliberate secondary fires following the introduction of the Arson Task Force, the level of deliberate secondary fires began to rise much more steeply in 2003, although the trend was also up for deliberate secondary refuse fires.

**Figure C20: Deliberate secondary refuse fires, all deliberate secondary fires and all fires in Cornwall (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

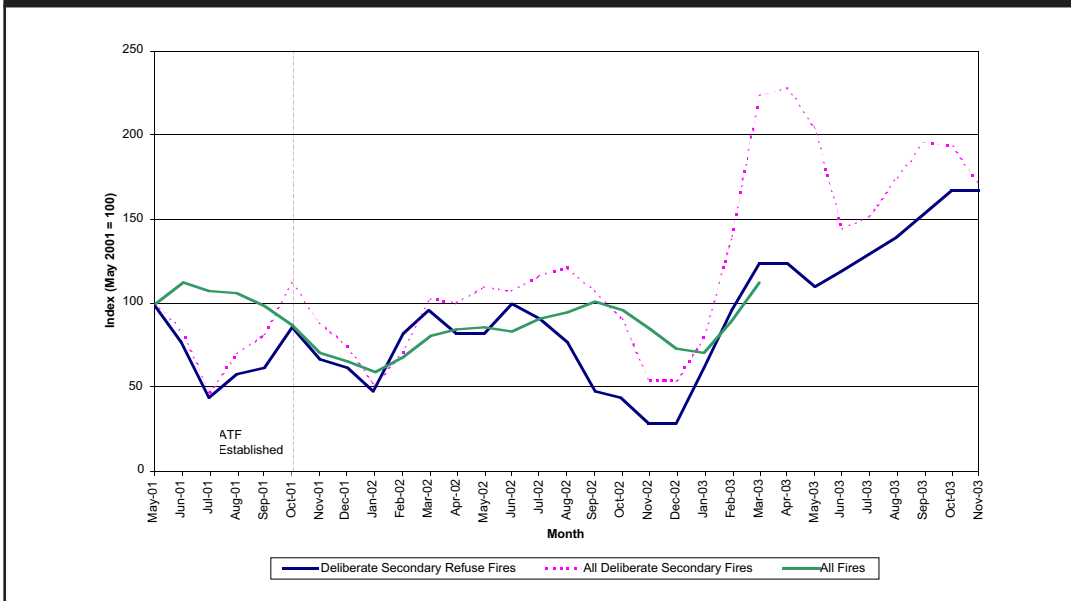


Figure C21 shows that the trend in deliberate refuse fires in Cornwall was very similar to that observed in Somerset, although the scale of the increase in late 2003 was much greater in Cornwall than that observed in Somerset.

**Figure C21: Deliberate secondary refuse fires in Cornwall and Somerset (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

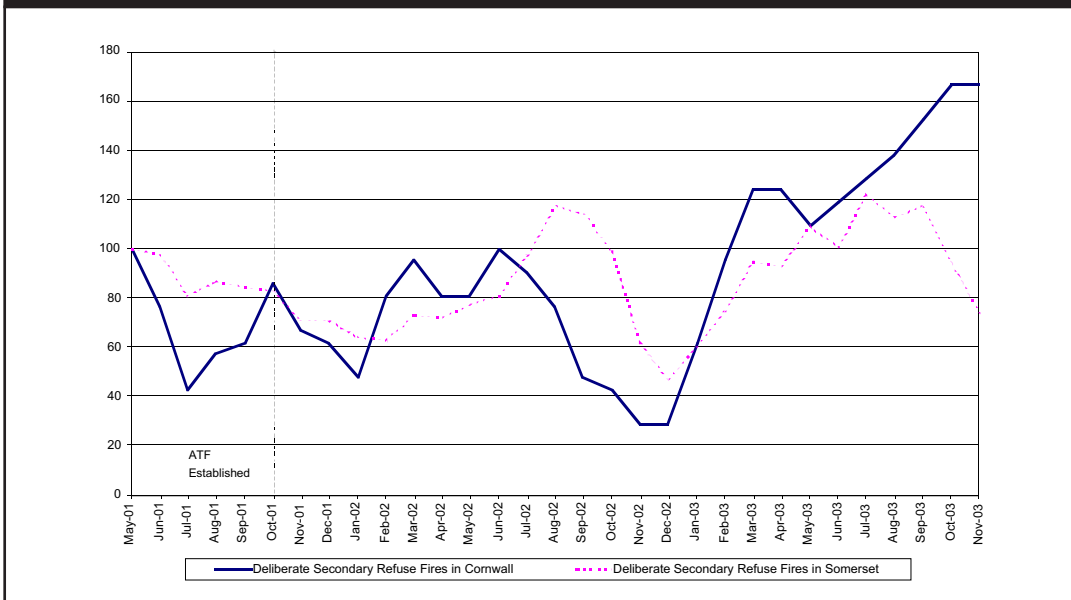


Table C28 indicates that the level of deliberate secondary refuse fires in Cornwall remained static pre / post intervention, while there was a slight increase in Somerset.

**Table C28: Number of deliberate secondary refuse fires in Cornwall and Somerset pre / post intervention**

	<i>Pre intervention</i> <i>Apr 01 to Sep 01</i>	<i>Post intervention</i> <i>Apr 02 to Sep 02</i>	<i>Percentage change</i>	<i>Significance</i>
Cornwall	33	33	0	ns
Somerset	280	292	+4	ns

The slightly better performance in Cornwall compared to Somerset resulted in an estimated reduction of one deliberate secondary refuse fire in the six months following intervention, according to Table C29.

**Table C29: Expected number of deliberate secondary refuse fires in Cornwall (April 2002 to September 2002), the actual level and the difference between them**

	<i>Impact estimate</i>
Expected level	34
Actual level	33
<b>Difference</b>	<b>-1</b>

### ***Deliberate primary fires in Devon***

Where deliberate primary fires overall are concerned, Table C30 shows that, following intervention, the level remained static in Devon, while both Lincolnshire and the Family Group experienced an increase. England and Wales, by contrast, experienced a slight reduction.

**Table C30: Number of deliberate primary fires in Devon, Lincolnshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> <i>Apr 01 to Sep 01</i>	<i>Post intervention</i> <i>Apr 02 to Sep 02</i>	<i>Percentage change</i>	<i>Significance</i>
Devon	559	560	0	ns
Lincolnshire	435	545	+25	**
Family Group	3,786	3,960	+5	ns
England & Wales	56,327	55,824	-1	ns

\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C31 shows that, the lowest impact estimate (in comparison to England and Wales) suggested that deliberate primary fires rose by seven following intervention. By contrast, the highest impact estimate (in comparison to Lincolnshire) suggested a reduction of 139 deliberate primary fires of all kinds.

**Table C31: Expected number of deliberate primary fires in Devon (April 2002 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	553	699
Actual level	560	560
<b>Difference</b>	<b>+7</b>	<b>-139</b>

### ***Deliberate primary fires in Cornwall***

Table C32 shows that Cornwall experienced a larger reduction in deliberate primary fires than other areas examined. Indeed, while Cornwall witnessed a seven percent reduction, there were increases in both Somerset and the Family Group.

**Table C32: Number of deliberate primary fires in Cornwall, Somerset, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Apr 01 to Sep 01	Apr 02 to Sep 02		
Cornwall	304	284	-7	ns
Somerset	349	461	+32	**
Family Group	2,296	2,475	+8	ns
England & Wales	56,327	55,824	-1	ns

\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

The reduction in deliberate primary fires in Cornwall translated into an impact of between -17 and -117 incidents in the six-months following intervention.

**Table C33: Expected number of deliberate primary fires in Cornwall (April 2002 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	301	401
Actual level	284	284
<b>Difference</b>	<b>-17</b>	<b>-117</b>

## **SUMMING UP THE IMPACT**

Examining the impact in Devon and Cornwall together, the Arson Task Force would appear to have had the following impact:

- Deliberate primary vehicle fires increased in both Devon and Cornwall in the six months following intervention. However, the counties performed better than four of the six comparisons made. This meant that the impact on deliberate primary vehicle fires was between +72 and -113 incidents.
- Deliberate secondary refuse fires showed little change in both Devon and Cornwall, but both performed better than the two comparisons made (to Somerset and Lincolnshire). This translated into an impact of -270 deliberate secondary refuse fires across the two counties.

- Deliberate primary fires of all kinds declined in Cornwall, but remained static in Devon. Overall, the two counties performed better than five of the six comparisons made. This meant that the impact on deliberate primary vehicle fires was between -10 and -256 in the six months following intervention.



# Impact Analysis 7: Dorset Arson Reduction Co-ordinator (Bournemouth)

## OUTCOME DATA USED

The Arson Reduction Co-ordinator was in post from April 2002. The data used here was for primary and secondary deliberate fires and for all fires overall. These were broken down per month from April 1998 to December 2003.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate secondary fires and deliberate primary fires as these reflect the kind of fires addressed by the co-ordinator

### *Deliberate secondary fires*

Figure C22 shows the trend in deliberate secondary fires pre / post intervention. Following intervention, deliberate secondary fires would appear to have converged with the trend in all deliberates and all fires. It is also apparent that, following the commencement of the project, deliberate secondary fires did not rise as much in the summers of 2002 and 2003 as they had in the previous two summers.

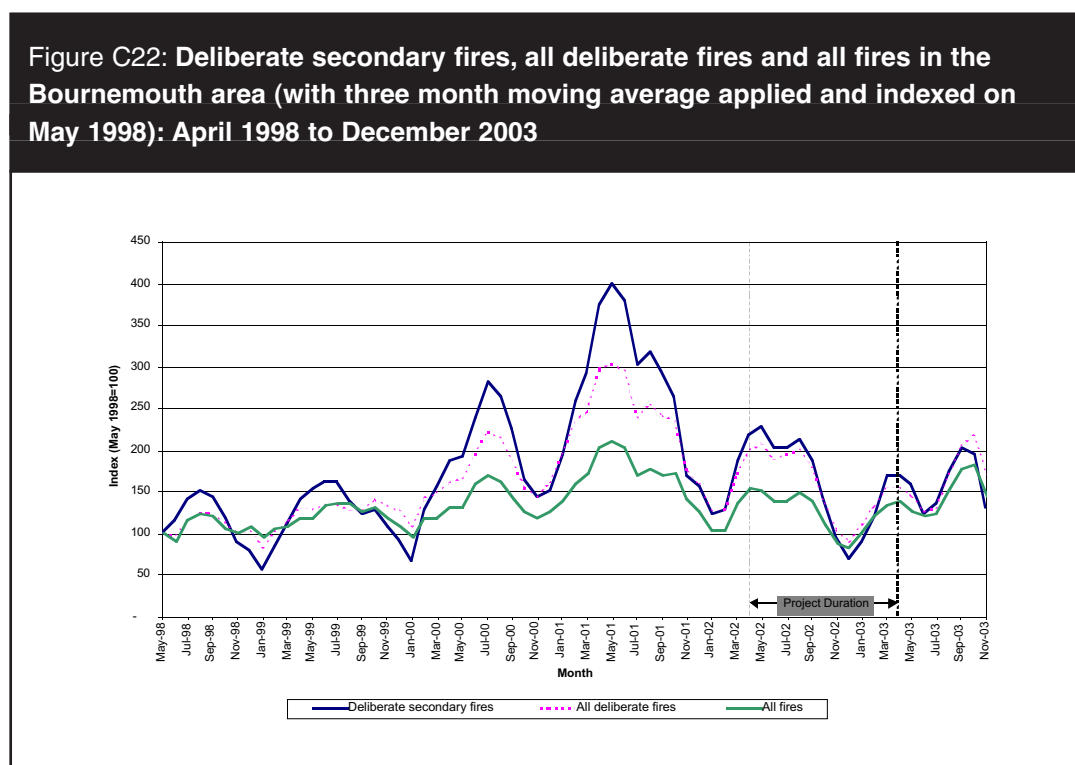


Figure C23 indicates that the trend in deliberate secondary fires in Bournemouth was generally downward and that the reduction was greater than that observed in the rest of the county or in Adur District<sup>42</sup>.

<sup>42</sup> It is important to note that, while Adur was selected as a comparison on the basis that it is in the same CDRP family, it is clear that the scale of the problem was much smaller than in Bournemouth to start with, which means the indexed trends are more liable to show volatile fluctuations.

**Figure C23: Deliberate secondary fires in Bournemouth, the Rest of Dorset (excluding Poole and Bournemouth) and Adur (with three month moving average applied and indexed on May 2000): May 2000 to December 2003**

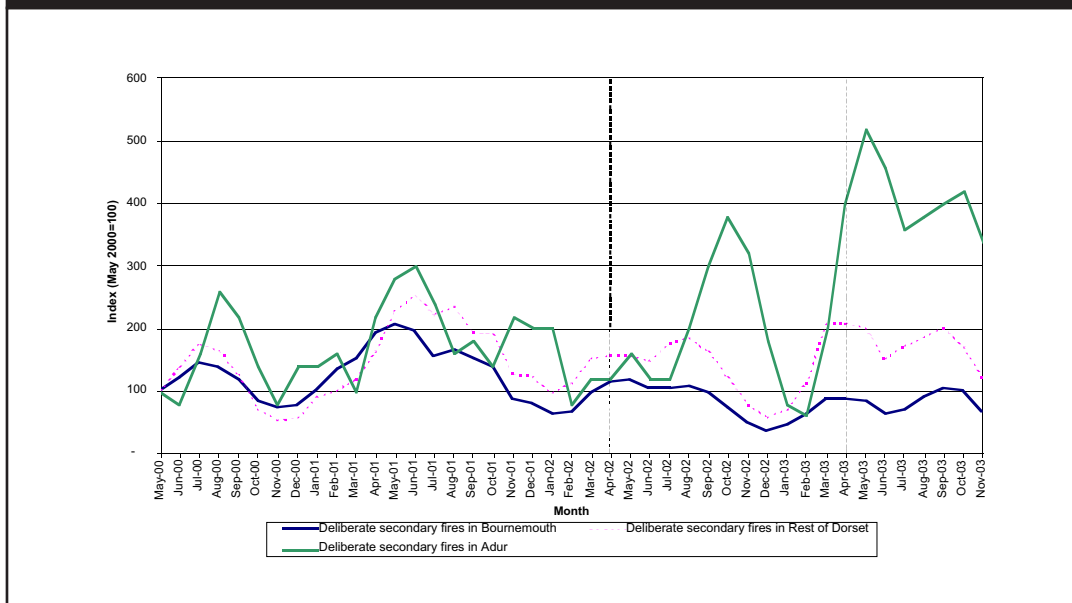


Table C34 shows that deliberate secondary fires declined by 36% in the year following intervention, compared to a 24% reduction in the rest of the county and no change in Adur.

**Table C34: Number of deliberate secondary fires in Bournemouth, the rest of Dorset (excluding Poole and Bournemouth) and Adur pre / post intervention**

	<i>Pre intervention</i> Apr 01 to Mar 02	<i>Post intervention</i> Apr 02 to Mar 03	<i>Percentage change</i>	<i>Significance</i>
Bournemouth	723	465	-36	ns
Rest of Dorset	570	431	-24	ns
Adur	37	37	0	ns

Table C35 shows that the reduction in Bournemouth translated into a reduction of between -85 and -258 deliberate secondary fires.

**Table C35: Expected number of deliberate secondary fires in Bournemouth (April 2002 to March 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	550	723
Actual level	465	465
<b>Difference</b>	<b>-85</b>	<b>-258</b>

***Deliberate primary fires***

Table C36 shows that the reduction in deliberate primary fires translated into a 25% reduction in deliberate primary fires, compared to reductions of between 10% and 21% elsewhere.

**Table C36: Number of deliberate primary fires in Bournemouth, the rest of Dorset (excluding Poole and Bournemouth) and Adur pre / post intervention**

	<i>Pre intervention</i> Apr 01 to Mar 02	<i>Post intervention</i> Apr 02 to Mar 03	<i>Percentage change</i>	<i>Significance</i>
Bournemouth	990	740	-25	ns
Rest of Dorset	956	755	-21	ns
Adur	91	82	-10	ns

The reduction observed in deliberate primary fires would appear to have translated into a reduction of between –42 and –151 deliberate fires in comparison to other areas.

**Table C37: Expected number of deliberate primary fires in Bournemouth (April 2002 to March 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	782	891
Actual level	740	740
<b>Difference</b>	<b>-42</b>	<b>-151</b>

## SUMMING UP THE IMPACT

The Arson Reduction Co-ordinator in Bournemouth would appear to be associated with the following impact:

- Deliberate secondary fires declined by 36% and performed better than the two comparison groups available. This translated into a reduction of between –85 and –258 deliberate secondary fires.
- Deliberate primary fires declined by 25% in Bournemouth and performed better than the two comparison groups examined. This translated into a reduction of between –42 and –151 deliberate primary fires.

# Impact Analysis 8: Dorset Arson Reduction Co-ordinator (Poole)

## OUTCOME DATA USED

The Arson Reduction Co-ordinator was in post from October 2001 and concentrated mostly on capacity building activities – especially data analysis, although was also involved in a number of projects. The data used here was for primary and secondary deliberate fires and for all fires overall. These were broken down per month from April 1998 to December 2003.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate secondary fires and all deliberate fires as these reflect the kind of fires addressed by the co-ordinator

### *Deliberate secondary fires*

Figure C24 shows that, following the introduction of the co-ordinator, deliberate secondary fires converged closely with the trend for all fires, and throughout the period followed the trend in deliberate fires of all kinds closely.

In the winter of 2002/03, the level of deliberate secondary fires dropped to a level not seen since 1998.

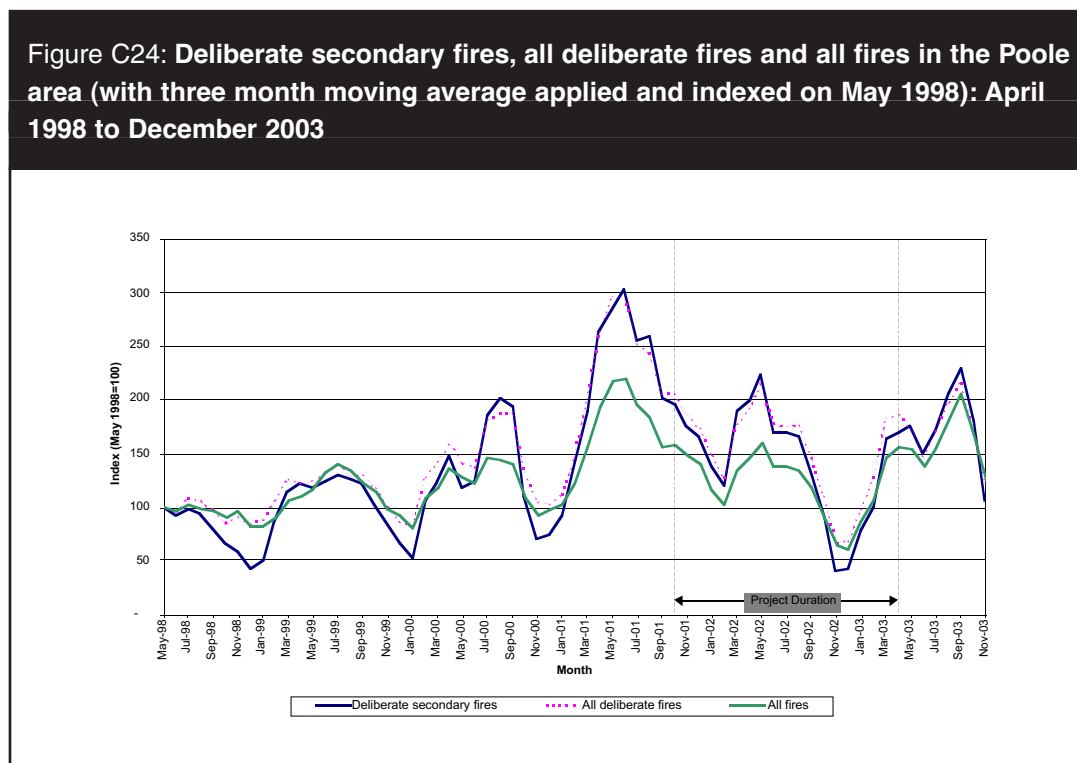


Figure C25 shows how deliberate secondary fires in Poole compared to other areas. While there was a general downward trend in Poole, this fell below that observed in the rest of the county.

**Figure C25: Deliberate secondary fires in Poole, the Rest of Dorset (excluding Poole and Bournemouth) and Arun (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

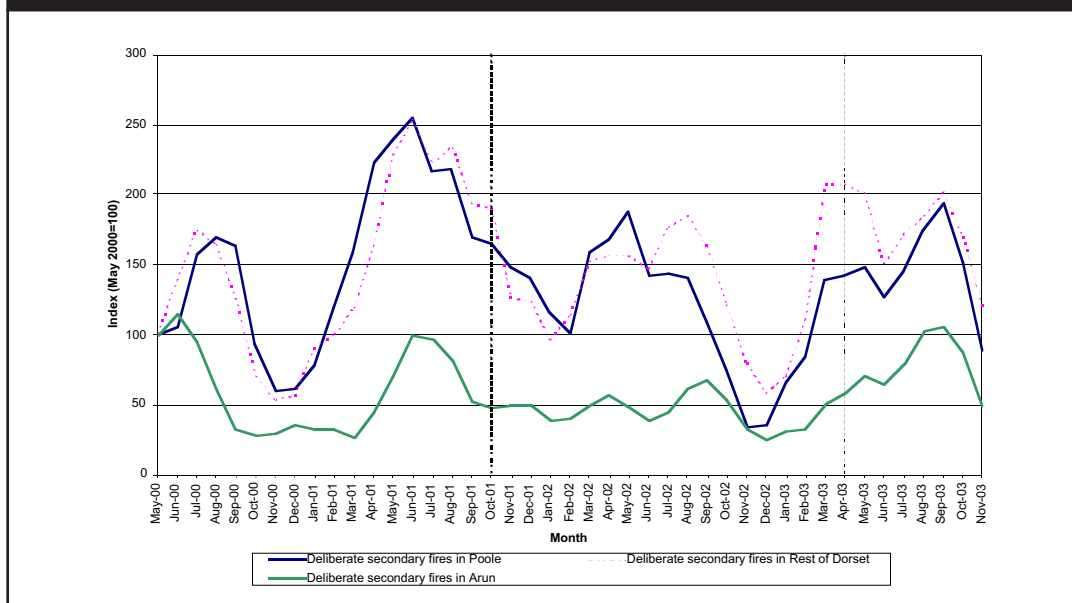


Table C38 shows that Poole experienced a nine percent reduction in the 12 months following the start of intervention. This was greater than the reductions observed in the rest of the county or in Adur, although none of these changes were statistically significant.

**Table C38: Number of deliberate secondary fires in Poole, the rest of Dorset (excluding Poole and Bournemouth) and Arun pre / post intervention**

	<i>Pre intervention</i> Oct 00 – Sep 01	<i>Post intervention</i> Oct 01 – Sep 02	<i>Percentage change</i>	<i>Significance</i>
Poole	567	514	-9	ns
Rest of Dorset	499	472	-5	ns
Arun	185	174	-6	ns

Table C39 shows that this reduction in Poole translated into between 19 and 25 fewer deliberate secondary fires, once the trends in the comparison areas were taken into account.

**Table C39: Expected number of deliberate secondary fires in Poole (October 2001 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	533	539
Actual level	514	514
<b>Difference</b>	<b>-19</b>	<b>-25</b>

***Deliberate primary fires***

Table C40 shows that the reduction in deliberate primary fires translated into a reduction of 11% in deliberate primary fires in Poole. This reduction was greater than in the comparison areas.

<b>Table C40: Number of deliberate primary fires in Poole, the rest of Dorset (excluding Poole and Bournemouth) and Arun pre / post intervention</b>					
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>	
	Oct 00 – Sep 01	Oct 01 – Sep 02			
Poole	822	733	-11	ns	
Rest of Dorset	866	852	-2	ns	
Arun	378	375	-1	ns	

Table C41 shows that the number of deliberate primary fires in Poole declined by between 73 and 81, once comparison areas were taken into account.

<b>Table C41: Expected number of deliberate primary fires in Poole (October 2001 to September 2002), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	1806	814
Actual level	733	733
<b>Difference</b>	<b>-73</b>	<b>-81</b>

**SUMMING UP THE IMPACT**

The Arson Reduction Co-ordinator in Poole would appear to be associated with the following impact:

- Deliberate secondary fires declined by 9% and performed better than the two comparison groups available. This translated into a reduction of between –19 and –25 deliberate secondary fires.
- Deliberate primary fires declined by 11% in Poole and performed better than the two comparison groups examined. This translated into a reduction of between 73 and 81 deliberate primary fires.

## Impact Analysis 9: East Sussex Youth Diversion Scheme

### OUTCOME DATA USED

Monthly outcome data was supplied from April 2000 to December 2003 and this included primary and secondary fires and whether deliberate or accidental.

### ANALYSIS OF IMPACT

The following analysis is based on deliberate primary vehicle fires and all deliberate primary fires across East Sussex. The youth diversion intervention in East Sussex was primarily concerned with reducing deliberate vehicle fires so it follows that the analysis should concentrate on this issue.

#### *Deliberate primary vehicle fires*

Figure C26 shows that primary deliberate vehicle fires experienced a steady reduction from the autumn of 2001 – well before the commencement of the diversion scheme. While for most of the period the trend in deliberate vehicle fires had followed that for deliberate primary fires of all kinds and total fires, following the diversion scheme, the trend in deliberate vehicle fires was lower.

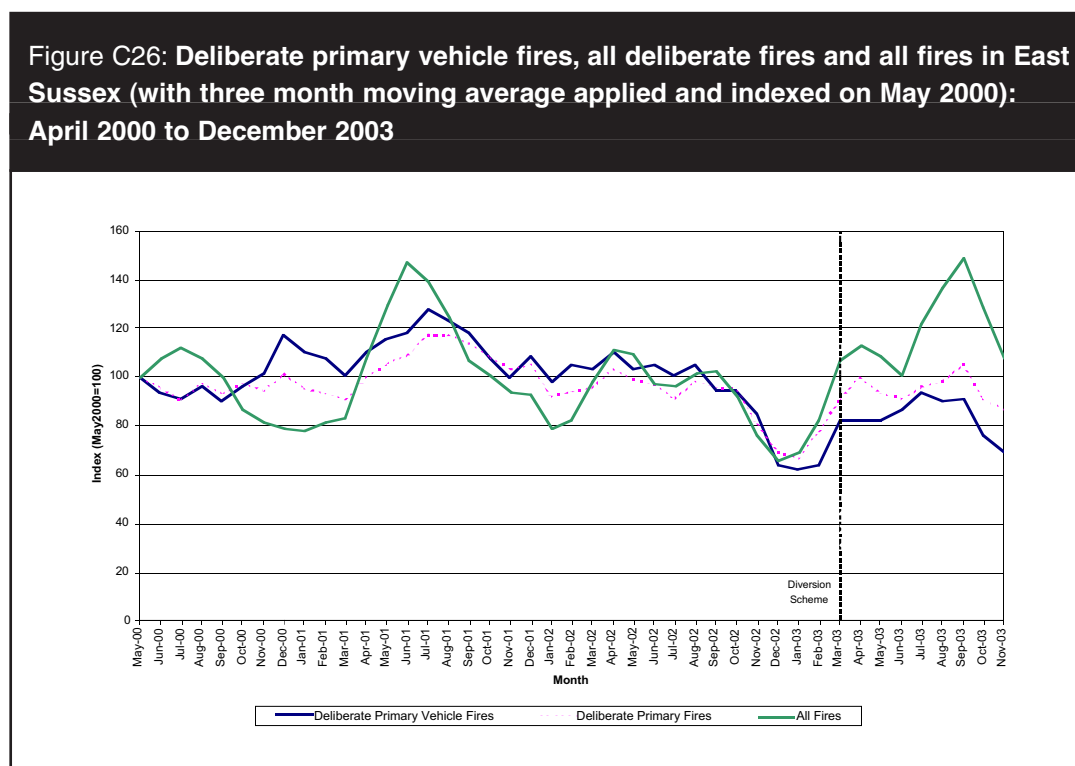


Figure C27 shows that deliberate vehicle fires in East Sussex followed a similar trend to West Sussex, the family group and England and Wales until the summer of 2002, when East Sussex began to fall and West Sussex began to rise. Following the start of the intervention, the gap between East Sussex and West Sussex appeared to grow.

**Figure C27: Deliberate primary vehicle fires in East Sussex, West Sussex, the Family Group and England and Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

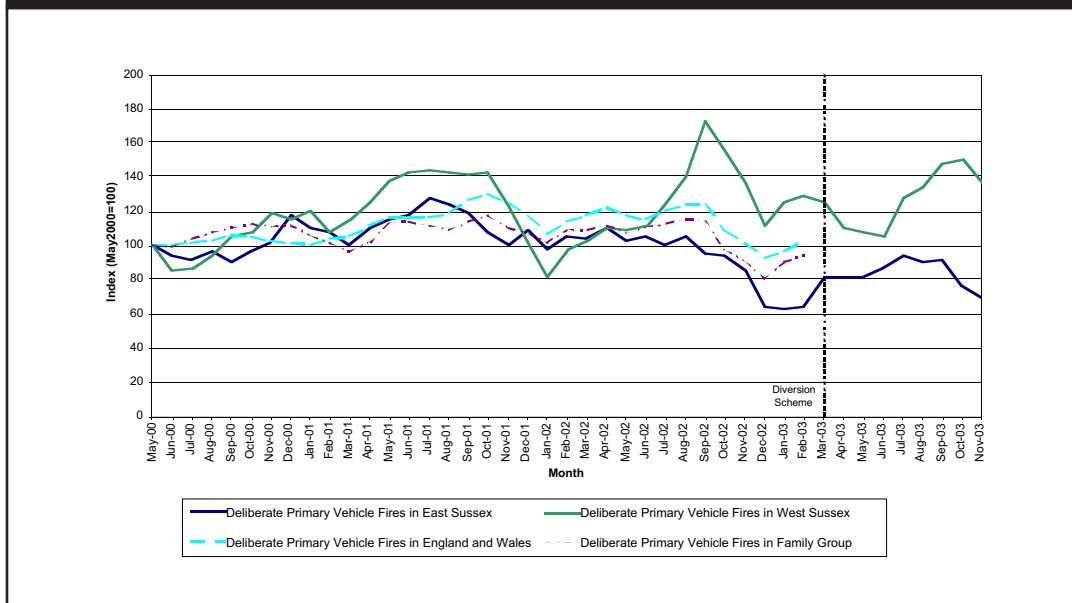


Table C42 shows that there was a statistically significant reduction of 19% in East Sussex deliberate primary vehicle fires, compared to a 2% reduction in West Sussex.

**Table C42: Number of deliberate primary vehicle fires in East Sussex and West Sussex pre / post intervention**

	<i>Pre intervention</i> Mar 02 – Dec 02	<i>Post intervention</i> Mar 03 – Dec 03	<i>Percentage change</i>	<i>Significance</i>
East Sussex	691	561	-19	*
West Sussex	415	407	-2	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

Table C43 estimates that there were 116 fewer deliberate vehicle fires than expected in East Sussex, when compared to the trend in west Sussex.

**Table C43: Expected number of deliberate primary vehicle fires in East Sussex (March 2003 to Dec 2003), the actual level and the difference between them**

	<i>Impact estimate</i>
Expected level	677
Actual level	561
<b>Difference</b>	<b>-116</b>

***Deliberate primary fires***

Table C44 examines the change in deliberate fires of all kinds in East Sussex. Although there was a large reduction in deliberate vehicle fires, there was no change in the number of deliberate primary fires of all kinds. However, this was an improvement on West Sussex, which experienced a 6% increase in deliberate primary fires.



**Table C44: Number of deliberate primary fires in East Sussex and West Sussex pre / post intervention**

	<i>Pre intervention</i> Mar 02 – Dec 02	<i>Post intervention</i> Mar 03 – Dec 03	<i>Percentage change</i>	<i>Significance</i>
East Sussex	1,077	1,076	0	ns
West Sussex	734	776	+6	ns

Table C45 shows that, based on the comparison with West Sussex, there were 66 fewer deliberate primary fires of all kinds than expected.

**Table C45: Expected number of deliberate primary fires in East Sussex (March 2003 to December 2003), the actual level and the difference between them**

	<i>Impact estimate</i>
Expected level	1,142
Actual level	1,076
<b>Difference</b>	<b>-66</b>

## SUMMING UP THE IMPACT

The Youth Diversion scheme in East Sussex would appear to be associated with the following impact:

- Deliberate primary vehicle fires declined in East Sussex by 19% in the ten months following the commencement of the intervention. This was a better performance than in West Sussex and suggested that there were 116 fewer deliberate primary vehicle fires than expected.
- Deliberate fires of all kinds in East Sussex remained static in the ten months following the intervention, compared to a 6% rise in West Sussex. There were estimated to have been 66 fewer deliberate primary fires of all kinds than expected.

# Impact Analysis 10: Hampshire Collaborate Data Sharing and Arson Task Force

## OUTCOME DATA USED

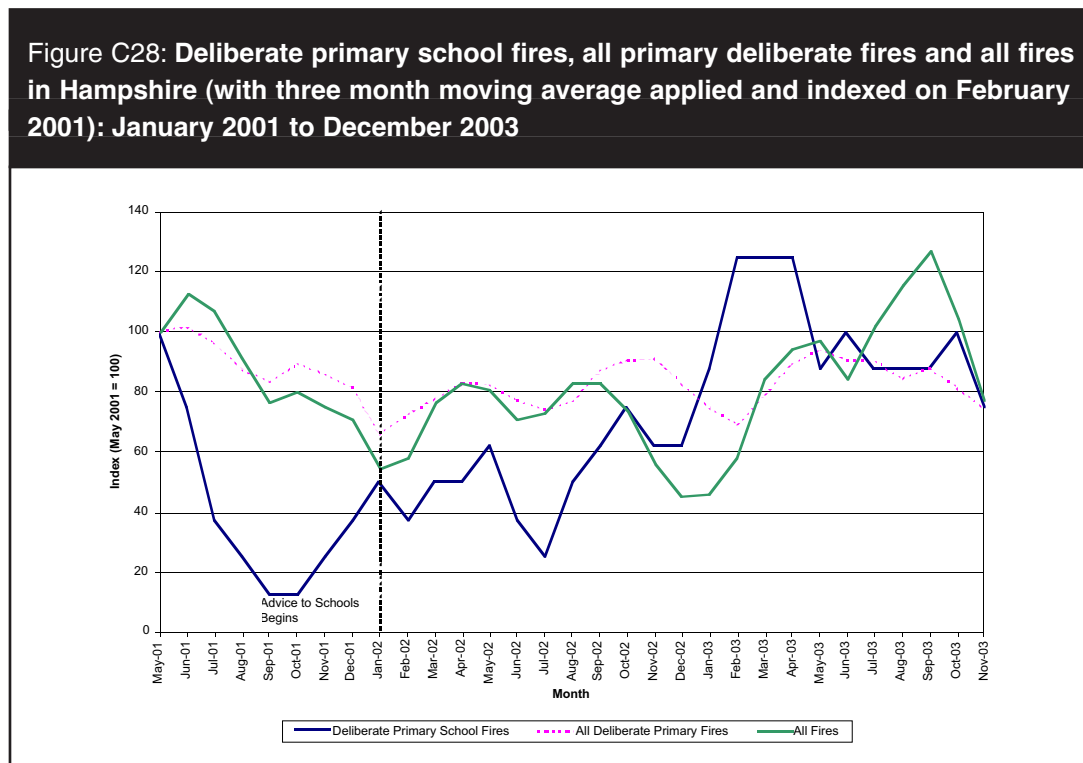
The Arson Forum Co-ordinator was in post in November 2001 and with the local Arson Control Forum identified two main areas for arson reduction projects: vehicle arson in two 'hot spot' areas; and arson in schools across the County and the Isle of Wight. The outcome data here therefore, focuses upon deliberate vehicle fires and deliberate fires in and around school buildings. Data were obtained for deliberate school fires, deliberate vehicle fires, all deliberate fires and all fires between January 2001 and December 2003.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate school fires, deliberate primary vehicle fires and all primary fires as these reflect the kind of fires addressed by the project.

### *Deliberate school fires*

Figure C28 shows the trend in deliberate primary fires in schools increased following the introduction of the intervention and converged with the trends for deliberate primary fires of all kinds and all fires by mid 2003.



Comparisons with deliberate primary fires in schools for the Family Group and England and Wales showed that the trend in Hampshire was initially lower, before converging with the comparison data. Figures for England and Wales and the Family Group were

only available up to March 2003, so it is unclear whether the increase in Hampshire was matched by the national trends.

**Figure C29: Deliberate primary school fires in Hampshire, Family Group and England & Wales (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

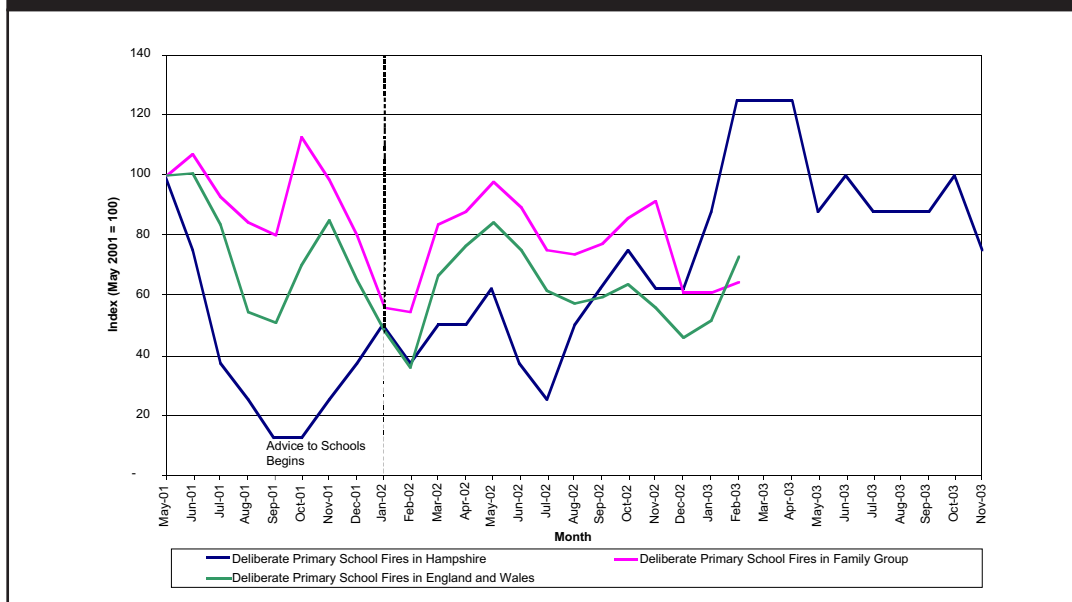


Table C46 shows that the actual number of deliberate primary fires in schools was low, with just 12 in the nine months to December 2001 and 14 in the corresponding period for 2002. This increase compares to declines in the Family Group and in England and Wales.

**Table C46: Number of deliberate primary school fires in Hampshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Apr 01-Dec 01	<i>Post intervention</i> Apr 02-Dec 02	<i>Percentage change</i>	<i>Significance</i>
Hampshire	12	14	+17	ns
Family Group	238	221	-7	ns
England & Wales	714	589	-18	ns

Table C47 suggests that, in comparison to the Family Group and England and Wales, there were estimated to be an additional three to four deliberate primary fires in schools in the nine months to December 2002.

**Table C47: Expected number of deliberate primary school fires in Hampshire (April 2003 to Dec 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	10	11
Actual level	14	14
<b>Difference</b>	<b>+4</b>	<b>+3</b>

***Deliberate primary vehicle fires in Redbridge***

This section examines the impact of the vehicle removal scheme, which was launched in March 2002. Figure C30 shows that, following the introduction of the vehicle scheme, deliberate vehicle fires continued to decline, following a trend that commenced in early 2001. However, from late 2002, deliberate primary vehicle fires began to increase. This trend closely followed that for all deliberate primary fires.

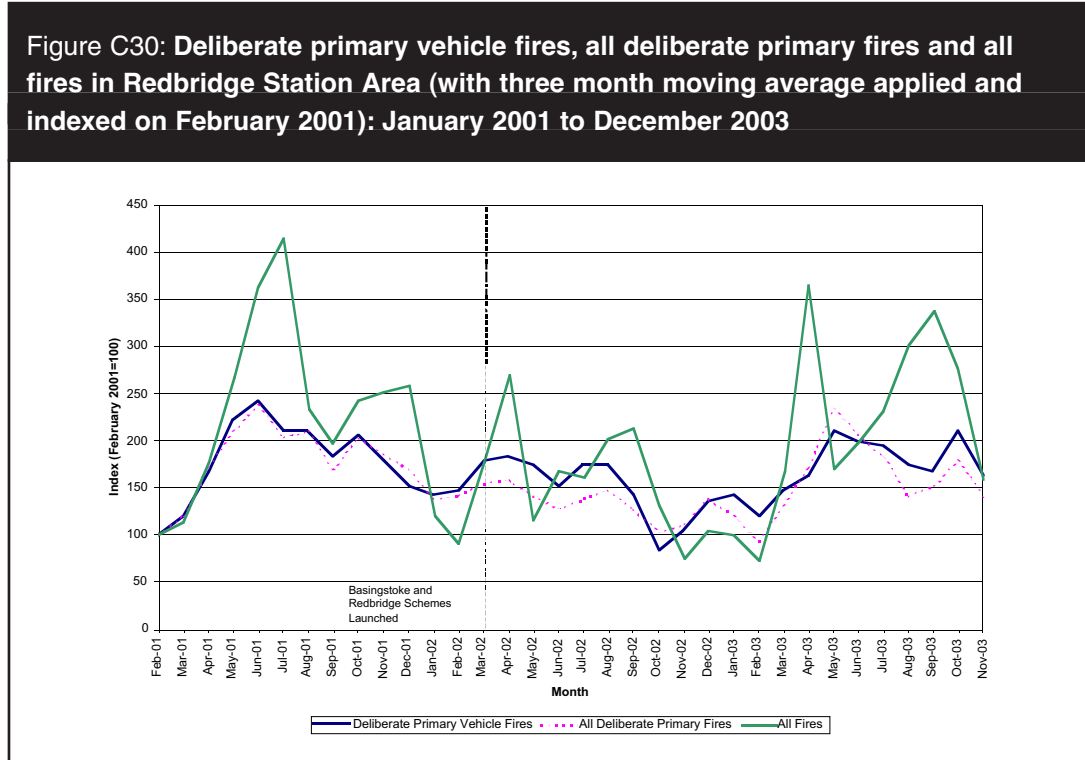


Figure C31 shows the trend in Redbridge, compared to the rest of Southampton, the rest of the county, the Family Group and England and Wales. It is clear that, while the figures in Redbridge initially declined and then rose again, in the comparison areas, the trends were relatively flat.

**Figure C31: Deliberate primary vehicle fires in Redbridge Station Area, the Rest of Southampton, the Rest of Hampshire<sup>43</sup>, Family Group and England and Wales (with three month moving average applied and indexed on February 2001): January 2001 to December 2003**

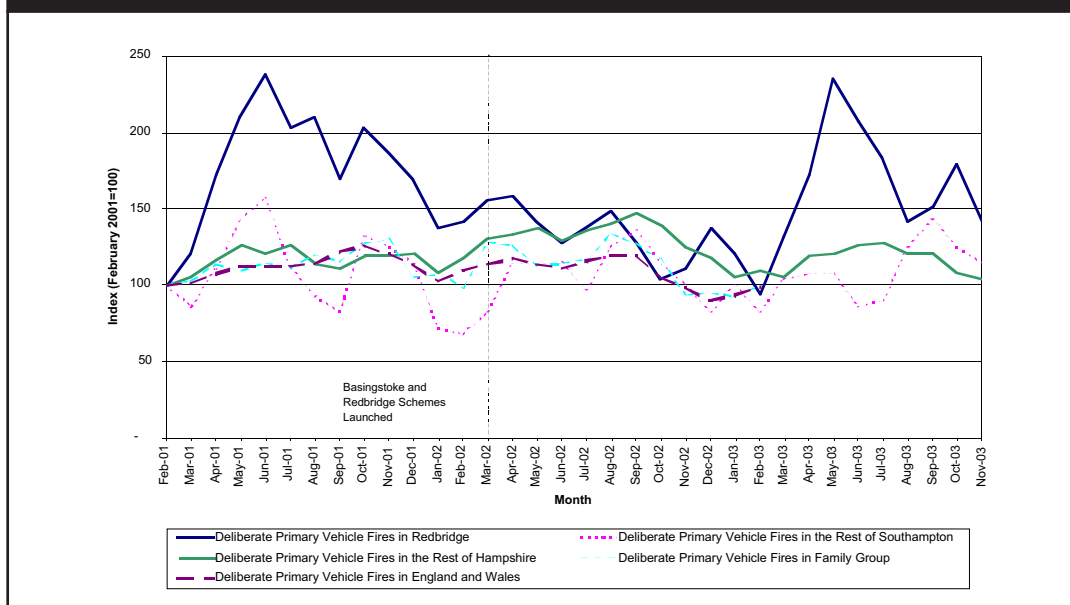


Table C48 indicates that Redbridge witnessed a 20% reduction in deliberate primary vehicle fires. This was a larger decline than seen in any of the comparison areas, although it is important to remember that this trend began before the onset of the project.

**Table C48: Number of deliberate primary vehicle fires in Redbridge Station Area, the Rest of Southampton, the Rest of Hampshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Mar 01 – Feb 02	Mar 02 – Feb 03		
Redbridge	138	111	-20	ns
Rest of Southampton	119	119	0	ns
Rest of Hampshire	700	767	+10	ns
Family Group	22,837	22,845	0	ns
England & Wales	72,331	69,714	-4	ns

Table C49 shows that the lowest impact estimate (in comparison to England and Wales) was that there were 22 fewer deliberate primary vehicle fires in Redbridge per year. The highest impact estimate (in comparison to the rest of Hampshire) indicated that there were 41 fewer deliberate primary vehicle fires in Redbridge.

<sup>43</sup> Figures for the rest of Hampshire exclude Southampton and Basingstoke where vehicle schemes were in operation.

**Table C49: Expected number of deliberate primary vehicle fires in Redbridge Station Area (March 2002 to February 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	133	152
Actual level	111	111
<b>Difference</b>	<b>-22</b>	<b>-41</b>

***Deliberate primary vehicle fires in Basingstoke***

Figure C32 shows that, on the whole, the trends in deliberate primary vehicle fires, all deliberate primary fires and all fires followed a relatively similar trend, with a steady increase following the introduction of the vehicle scheme.

**Figure C32: Deliberate primary vehicle fires, all deliberate primary fires and all fires in Basingstoke (with three month moving average applied and indexed on February 2001): January 2001 to December 2003**

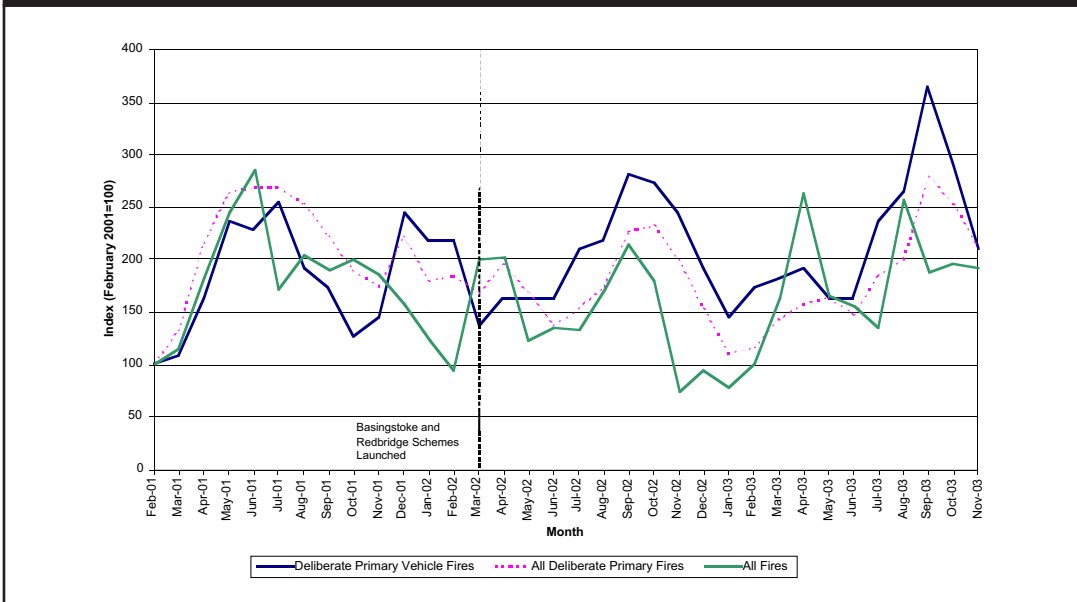


Figure C33 shows that the trend in deliberate primary vehicle fires was upwards in Basingstoke following the introduction of the vehicle project. The wider fluctuations in Basingstoke are due to the smaller number of cases per month. The trends in the comparison areas either remained relatively static, or were downward, as in Maidstone.

**Figure C33: Deliberate primary vehicle fires in Basingstoke, Maidstone, the Rest of Hampshire, Family Group and England and Wales (with three month moving average applied and indexed on February 2001): January 2001 to December 2003**

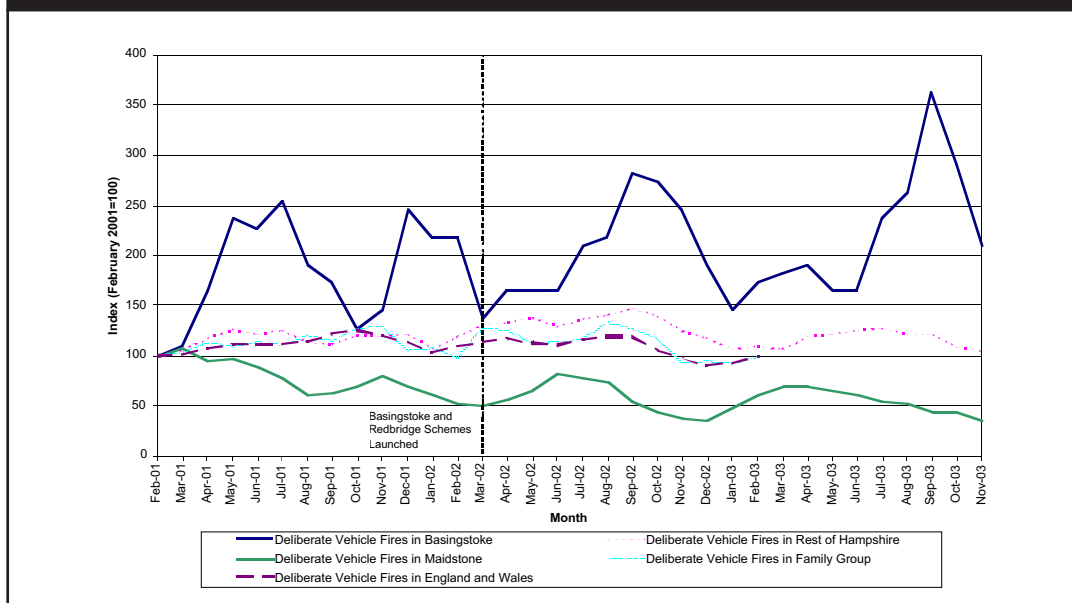


Table C50 shows that in the year following intervention, deliberate vehicle fires rose by 14% in Basingstoke. This increase was greater than in any of the comparison areas.

**Table C50: Number of deliberate primary vehicle fires in Basingstoke, Maidstone the Rest of Hampshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Mar 01 – Feb 02	<i>Post intervention</i> Mar 02 – Feb 03	<i>Percentage change</i>	<i>Significance</i>
Basingstoke	84	96	+14	ns
Rest of Hampshire	700	767	+10	ns
Maidstone	251	188	-25	*
Family Group	22,837	22,845	0	ns
England & Wales	72,331	69,714	-4	ns

\* statistically significant at the 0.05 level, based on Mann Whitney U test.

Table C51 shows that deliberate primary fires in Basingstoke were estimated to have increased following intervention, with between four and 33 additional fires in the post intervention year.

**Table C51: Expected number of deliberate primary vehicle fires in Basingstoke (March 2002 to February 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	63	92
Actual level	96	96
<b>Difference</b>	<b>+33</b>	<b>+4</b>

### ***Deliberate primary fires***

Analysis was also undertaken to determine whether the reductions observed in schools fires and vehicle fires translated into a reduction in deliberate primary fires in general.

Table C52 shows the change in deliberate primary fires in Redbridge. While there was a 20% reduction in deliberate primary vehicle fires in Redbridge, there was a 28% reduction in all deliberate primary fires. Clearly, not all of the deliberate primary fire reduction was due to the reduction in vehicle fires.

<b>Table C52: Number of deliberate primary fires in Redbridge Station Area, the Rest of Southampton, the Rest of Hampshire, Family Group and England and Wales pre / post intervention</b>					
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>	
	Mar 01 – Feb 02	Mar 02 – Feb 03			
Redbridge	208	151	-28	**	
Rest of Southampton	228	203	-11	ns	
Rest of Hampshire	1,322	1,361	+3	ns	
Family Group	34,559	33,563	-3	ns	
England & Wales	109,921	103,640	-6	ns	
** statistically significant at the 0.05 level, based on Mann Whitney U test.					

Table C53 shows that the reduction in deliberate primary fires in Redbridge resulted in between 34 and 63 fewer incidents in the year following intervention.

<b>Table C53: Expected number of deliberate primary fires in Redbridge Station Area (March 2002 to February 2003), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	185	214
Actual level	151	151
<b>Difference</b>	<b>-34</b>	<b>-63</b>

Where Basingstoke was concerned, there was a 19% reduction in all deliberate primary fires in the year following intervention. Given the fact that deliberate vehicle fires in the town rose by 14%, this reduction cannot be attributed to the scheme, for this reason no analysis of lowest/highest estimate was calculated.

<b>Table C54: Number of deliberate primary fires in Basingstoke, Maidstone the Rest of Hampshire, Family Group and England and Wales pre / post intervention</b>					
	Mar 01 – Feb 02	Mar 02 – Feb 03			
Basingstoke	162	131	-19	ns	
Rest of Hampshire	1,322	1,361	+3	ns	
Maidstone	308	247	-19	ns	
Family Group	34,559	33,563	-3	ns	
England & Wales	109,921	103,640	-6	ns	



Table C55 shows that, across Hampshire, there was a four percent reduction in deliberate primary fires, which was similar to the reductions in the Family Group and in England and Wales.

<b>Table C55: Number of deliberate primary fires in Hampshire, Family Group and England and Wales pre / post intervention</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Mar 01 – Feb 02	Mar 02 – Feb 03		
Hampshire	1,920	1,846	-4	ns
Family Group	34,559	33,563	-3	ns
England & Wales	109,921	103,640	-6	ns

The changes in deliberate primary fires of all kinds translated into between an increase of 41 or a reduction of 16 fires in Hampshire in the year to February 2003, as indicated by Table C56.

<b>Table C56: Expected number of deliberate primary fires in Hampshire (March 2002 to February 2003), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	1,805	1,862
Actual level	1,846	1,846
<b>Difference</b>	<b>+41</b>	<b>-16</b>

## SUMMING UP THE IMPACT

Analysis of deliberate fires in Hampshire indicate that the Collaborate Data Sharing and Arson Task Force projects resulted in the following impact:

- Deliberate primary fires in schools started from a low base and increased slightly following intervention, with three to four more fires than expected in Hampshire.
- Deliberate vehicle fires in Redbridge declined by 20%, resulting in between 22 and 41 fewer incidents in the year following intervention.
- Deliberate vehicle fires in Basingstoke rose by 14% and resulted in more fires than expected post intervention.
- Deliberate primary fires overall declined by 28% in Redbridge, some of which could be attributed to the drop in deliberate vehicle fires. A decline was witnessed in Basingstoke, but this could not be attributed to the intervention.
- Deliberate primary fires across Hampshire declined by 4%, with an estimate of between 16 fewer and 41 more deliberate fires in the year after intervention.

# Impact Analysis 11: Lancashire Arson Reduction Team

## OUTCOME DATA USED

The outcome data used for the analysis of the project was based upon all primary fires, all deliberate primary fires and all deliberate secondary refuse fires.

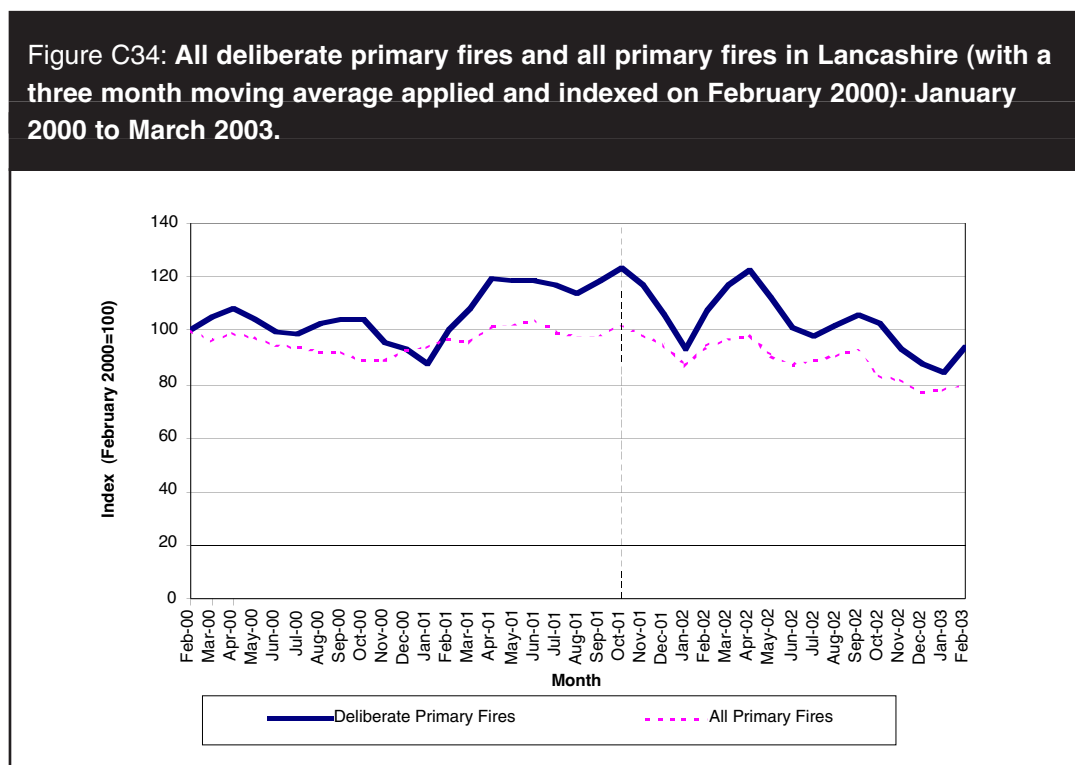
## ANALYSIS OF IMPACT

The project was based upon the reduction of deliberate fires through the use of problem oriented policing and fire investigation. There was also a focus on the promotion of fire safety awareness and the removal of fuel across the brigade. The analysis compares all deliberate primary fires across the brigade and deliberate secondary refuse fires for a pre-project period (October 2002 to September 2001) against the first year of the project. The project began in October 2001, and is denoted on the graphs by a dotted line.

### *Deliberate primary fires*

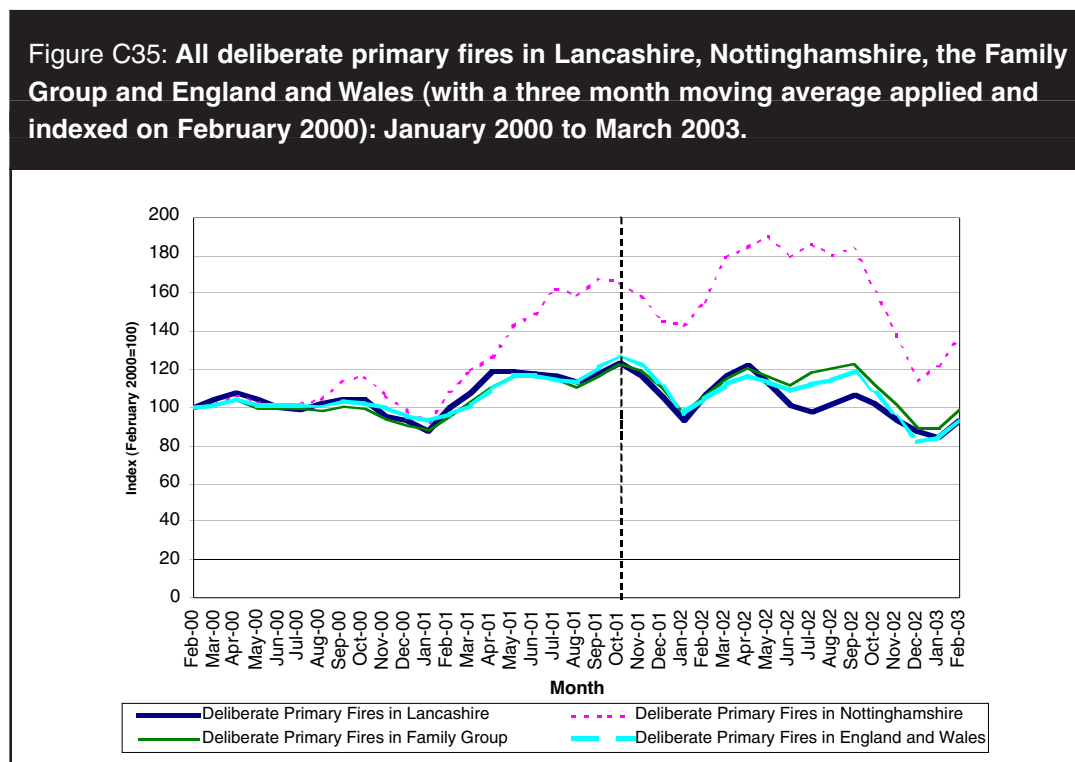
Figure C34 begins by comparing the overall number of primary fires in Lancashire to all deliberate primary fires for the period January 2000 to March 2003, these figures have had a three month moving average applied and have been indexed on February 2000.

This Figure shows that the number of deliberate primary fires and all primary fires has remained fairly consistent over the period. There does, however, appear to be a slight fall in both types of fires after the start of the project in October 2001.



A comparison of the pattern of deliberate primary fires in Lancashire is made against Nottinghamshire, the family group and England and Wales for the period January 2000

to March 2003 in Figure C35. This shows that there are similar trends in such fires over the period in Lancashire, the family group and England and Wales. The trend in Nottinghamshire (the comparison group) is somewhat different. Here there appears to be a sharp rise in such fires after January 2001.



The overall number of deliberate primary fires, for the pre-project period (October 2000 to September 2001) and the first year of the project, were compared. These are shown in Table C57, below. This shows that the rate of increase of deliberate primary fires was the lowest in Lancashire (where there was a 3% rise) and the highest in Nottinghamshire (where there was a 32% rise).

**Table C57: Number of deliberate primary fires of all kinds in Lancashire, Nottinghamshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Oct 00- Sep 01	Oct 01-Sep 02		
Lancashire	2,702	2,762	+3	ns
Nottinghamshire	3,287	4,356	+32	ns
Family Group	29,309	32,479	+11	*
England & Wales	104,355	111,285	+7	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

Using this data, an estimate of the potential impact of the project on reducing the number of primary deliberate fires is made in Table C58. The highest impact estimate is made by making a prediction of the potential number of fires in Lancashire, assuming that Lancashire had followed the trend in Nottinghamshire (32% increase). The lowest impact estimate is made by using data from England and Wales where there was an increase in primary deliberate fires of 7%. This suggests that there might have been between 2,891 and 3,566 deliberate primary fires in Lancashire had the project not

been running. Therefore, the project may have helped to prevent between 129 and 829 primary deliberate fires in Lancashire between October 2001 and September 2002.

**Table C58: Expected number of deliberate primary fires in Lancashire (October 2001 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	2,891	3,566
Actual level	2,762	2,763
<b>Difference</b>	<b>-129</b>	<b>-803</b>

***Deliberate Secondary Refuse Fires***

A focus of the Lancashire project was on the reduction of refuse fires. Figure C36 (below) compares the pattern of deliberate secondary refuse fires in Lancashire with the comparison area (Nottinghamshire), the family group and England and Wales.

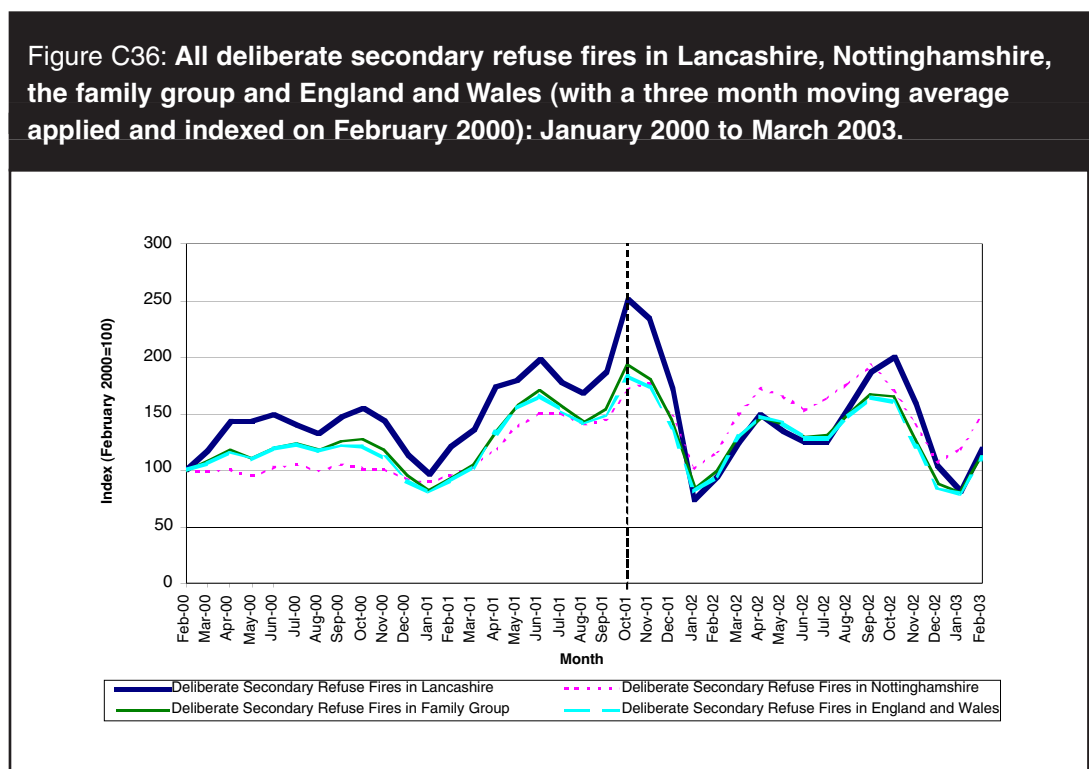


Figure C36 clearly shows that the pattern of deliberate secondary refuse fires is remarkably similar in all of the comparison groups. There is a general rise to October 2001, a fall to February 2002, another gradual climb to October 2002 and then another fall.

The actual numbers of deliberate secondary refuse fires are considered in Table C59 for a 12-month period, before the start of the project (October 2000-2001), as against the 12-month period after the project. This shows that the rate of increase was lowest in Lancashire (1%) and the highest in Nottinghamshire (33%).

**Table C59: Number of deliberate secondary refuse fires in Lancashire, Nottinghamshire, Family Group and England and Wales pre /post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Oct 00- Sep 01	Oct 01-Sep 02		
Lancashire	5,853	5,896	+1	ns
Nottinghamshire	1,822	2,429	+33	*
Family Group	40,506	44,646	+10	ns
England & Wales	136,723	153,497	+12	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

The overall impact of the project on deliberate secondary refuse fires is made below by using data from Nottinghamshire for the highest impact estimate (where there was a rise in such fires of 33%), and the lowest impact estimate made by using data from the family group (where there was a rise of 10%). This suggests that between October 2001 and September 2002 there could have been between 6,438 and 7,784 deliberate secondary refuse fires have there not been intervention. Therefore, the project may have helped reduce between 542 and 1,888 refuse fires over this period.

**Table C60: Expected number of deliberate secondary refuse fires in Lancashire (October 2001 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	6,438	7,784
Actual level	5,896	5,896
<b>Difference</b>	<b>-542</b>	<b>-1,888</b>

## SUMMING UP THE IMPACT

Overall the data for Lancashire suggests that the project might have helped to reduce the rate of increase of deliberate primary fires and deliberate secondary refuse fires in the brigade area. In summary:

- The rate of increase for deliberate primary fires was slower for the first year of the project than in all the comparison areas. Overall the project may have helped to prevent between 129 and 803 primary deliberate fires between October 2001 and September 2002.
- The rate of increase for deliberate secondary refuse fires was slower in Lancashire than the comparison areas. Here, the project may have helped to reduce between 542 and 1,886 refuse fires, in its first year.

# Impact Analysis 12: Leicestershire Multi Agency Task Force

## OUTCOME DATA USED

The data used for the outcome analysis was all deliberate fires (for the brigade and a number of station areas) and all fires. These were aggregated by month.

## ANALYSIS OF IMPACT

The Leicestershire project was based upon developing a variety of arson reduction activity across the brigade by conducting research on the root causes of arson and developing partnership working. The key tenant of the project that is quantifiably measurable related to the implementation of a number of SAMS boards across the county (Station Area Management Systems). The SAMS boards were based upon the identification and mapping of incidents within each station area at a regular intervals. It was hoped that the identification of clusters and patterns of incidents would help to facilitate reduction activity across the brigade.

The SAMS boards were implemented and running at stations at different times. There are 19 stations across the county (which are a mixture of retained and not retained). Therefore, getting the SAMS boards up and running is a task in itself. Most full time stations had implemented the boards by December 2003.

As the boards were generally not implemented in most areas until late 2003, the impact is measured by looking at data from two stations where boards were up and running for a number of months (Loughborough and Eastern) against two station areas where the boards were not up and running (Melton and Leicester). The data used are for all deliberate fires<sup>44</sup>.

### ***Deliberate Fires in the Loughborough Station Area***

Figure C37 presents the pattern of all deliberate fires and all fires in the Loughborough station area from April 2000 to December 2003 (with three month moving average applied and indexed on May 2000). This shows that the overall pattern for deliberate fires and all fires is similar. There is a gradual fall in all fires and all deliberate fires to January 2003 followed by increases in the number of deliberate fires in the station area from July 2003.

<sup>44</sup> The supplied data did not facilitate primary and secondary division.

**Figure C37: All deliberate fires and all fires in the Loughborough station area (with three month moving average applied and indexed on May 2000): April 2000 to December 2003.**

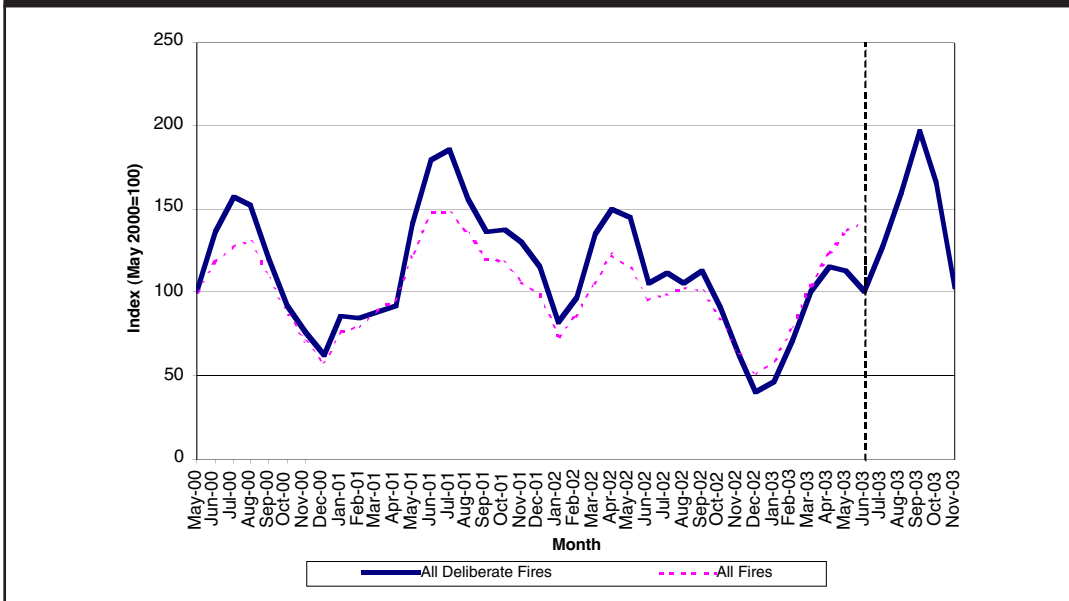


Figure C38 presents data for the number of deliberate fires in Loughborough against the comparison areas of Leicester and Melton. The trend for all three areas is remarkably similar with the patterns mirroring each other for most of the period. However, after April 2003 there is a sharp rise in deliberate fires in Loughborough and Melton and a fall in Leicester.

**Figure C38: All deliberate fires in Loughborough station area, Melton station area and Leicester station area (with three month moving average applied and indexed on May 2000): April 2000 to December 2003.**

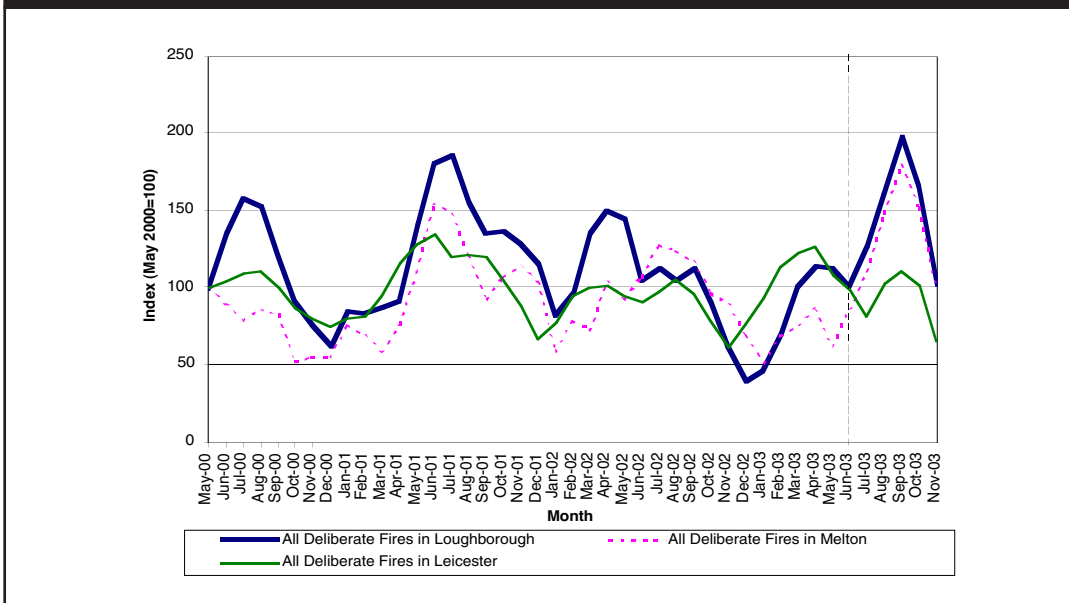


Table C61 presents data on the number of deliberate fires in the Loughborough station area as against the comparison station areas of Melton and Leicester, and additionally presents data on the rest of Leicestershire and the comparison brigade

(Nottinghamshire)<sup>45</sup>. The SAMS boards were implemented in Loughborough in June 2003, therefore comparison data is presented for the pre-implementation period of June 2002 to December 2002 and compared to June 2003 to December 2003, the first seven months of implementation.

**Table C61: The number of deliberate fires in Loughborough, Melton, Leicester, the Rest of Leicestershire and Nottinghamshire pre / post intervention.**

	<i>Pre intervention</i> Jun 02 - Dec 02	<i>Post intervention</i> Jun 03 - Dec 03	<i>Percentage change</i>	<i>Significance</i>
Loughborough	162	224	+38	ns
Melton	74	79	+7	ns
Leicester	312	305	-2%	ns
Rest of Leicestershire	1,983	2,489	+25	ns
Nottinghamshire	5,570	7,206	+29	ns

The table shows that in Loughborough there is actually a large increase in the number of deliberate fires (38%). There is also an increase of 7% in Melton, though in Leicester there is a slight reduction of 2%. There is an increase in Nottinghamshire of 29%.

Overall the expected number of deliberate fires in the Loughborough station area is greater than expected (see Table C62 - below). Using data from Leicester (where there was a reduction in deliberate fires of 2%) and Nottinghamshire (where there was an increase in deliberate fires of 29%) it would be expected that there would have been between 159 to 209 deliberate fires in the Loughborough station area between June 2003 and December 2003. There were actually 224 deliberate fires in the area- this is between 15 and 65 more than expected.

**Table C62: Expected number of deliberate fires in Loughborough (June 2003 to December 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	159	209
Actual level	224	224
<b>Difference</b>	<b>+65</b>	<b>+15</b>

### ***Deliberate Fires in the Eastern station area***

In the Eastern station area, the SAMS boards were implemented in April 2003. Figure C39 outlines the overall pattern of deliberate fires and all fires in the Eastern station area from May 2000 to November 2003. This shows that there is a similar trend for all fires and deliberate fires across the Eastern station area. There is a rise in the number to July 2001 and a steady fall to January 2003. After this period the number of deliberate fires began to rise again.

<sup>45</sup> Comparisons could not be drawn with Family Group or England and Wales as data on deliberate secondary fires is not included in the national figures.



**Figure C39: All deliberate fires and all fires in Eastern Station area (with three month moving average applied and indexed on May 2000): April 2000 to December 2003.**

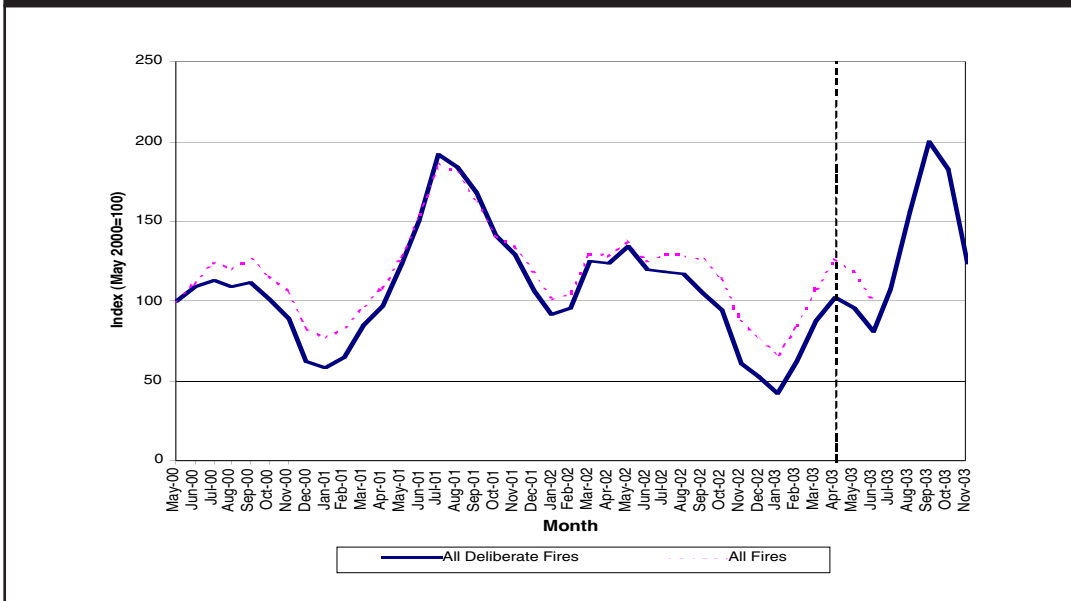
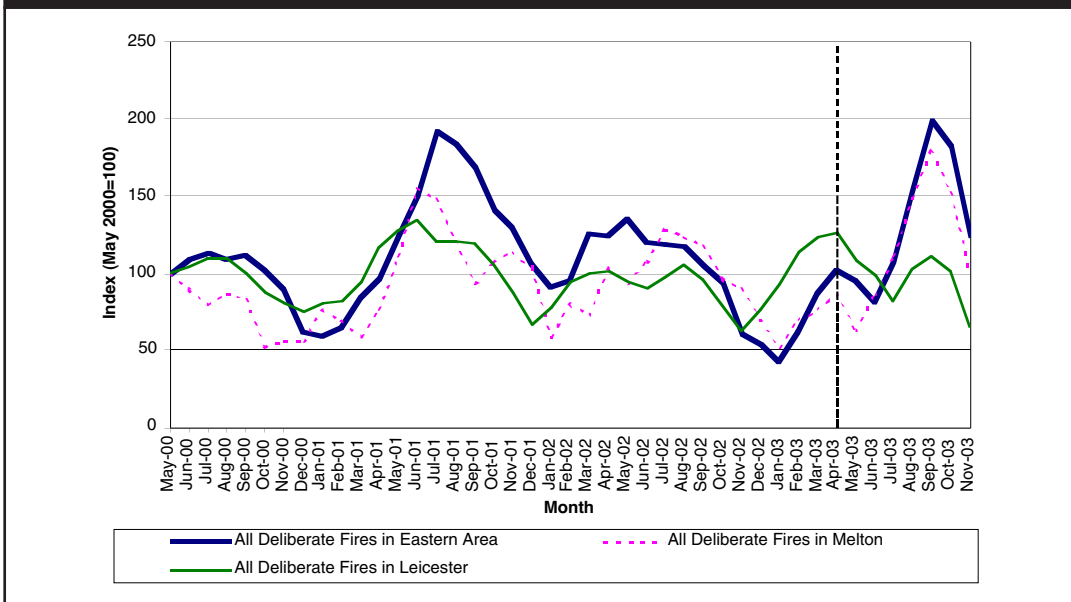


Figure C40 presents an outline of the trend in deliberate fires in the Eastern area as compared to the Melton and Leicester station areas.

**Figure C40: All deliberate fires in the Eastern area, Melton station area and Leicester station area (with three month moving average applied and indexed on May 2000): April 2000 to December 2003.**



A similar trend, to that shown in the previous figure, is observed. The trends are similar until the start of the project where there are increases in the Eastern area and Melton and reductions in Leicester.

The overall number of deliberate fires for these three areas is presented in Table C63. Here the data are presented for the pre-project period of April 2002 to December and

the project implementation period of April 2003 to December 2003 for the Eastern area and the comparison areas of Melton and Leicester station areas, in addition figures for the rest of Leicestershire and Nottinghamshire are provided.

**Table C63: The number of deliberate fires in the Eastern Area, Melton station area, Leicester station area, the rest of Leicestershire and Nottinghamshire pre / post intervention.**

	<i>Pre intervention</i> Apr 02 -Dec 02	<i>Post intervention</i> Apr 03 - Dec 03	<i>Percentage change</i>	<i>Significance</i>
Eastern Area	448	535	+19	ns
Melton	89	90	+1	ns
Leicester	411	434	+6	ns
Rest of brigade	2,455	3,123	+27	ns
Nottinghamshire	7,743	9,541	+23	ns

The table shows that there were increases in all three areas, with the largest increase in the area where the SAMS boards were implemented.

Using this data, we are able to make a prediction as to the expected number of deliberate fires in the Eastern area as against the actual number (see table C64 - below). If the Eastern area had similar patterns of deliberate fires to Melton between April 2003 and December 2003, there would have been 452 deliberate fires, which is 83 less than the actual number recorded. However, if the pattern had followed the trend for Nottinghamshire there would have been 568 deliberate fires, which is 33 more than the actual number recorded in the Eastern area. Therefore, the project in the Eastern area may have helped prevent 33 deliberate fires between April 2003 and December 2003.

**Table C64: Expected number of deliberate fires in Eastern area (April 2003 to December 2003)**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	452	568
Actual level	535	535
<b>Difference</b>	<b>+83</b>	<b>-33</b>

### SUMMING UP THE IMPACT

The data presented above show, that for the two areas of Loughborough and the Eastern area, the implementations of SAMS boards appears to have made little impact upon reducing deliberate fires in the respective areas. It is, however, important to realise that at present this is a capacity building exercise that is mainly based around identifying of patterns of arson. Therefore, it may too early to tell if the SAMS boards are likely to be successful or not in reducing deliberate fires.

# Impact Analysis 13: London Arson Task Force, Schools Officer and Vehicles Officer

## OUTCOME DATA USED

The data used in this analysis consisted of monthly data for deliberate and all fires. This included different types of deliberate fires, including those in educational establishments and those involving vehicles, both of which were of use in the current analysis. The figures have been provided for London as a whole. Comparisons were made to the family group and to national data.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate primary vehicle fires, deliberate school fires and all primary fires as these reflect the kind of fires addressed by the projects.

### *Deliberate primary vehicle fires*

Figure C41 shows the trend in deliberate primary vehicle fires in London. This shows that, prior to the start of the intervention in April 2002, the trend rose above that for all deliberate fires and converged more closely with all deliberate fires after intervention. It also shows that following intervention, the trend was downwards, although this commenced from the autumn of 2001.

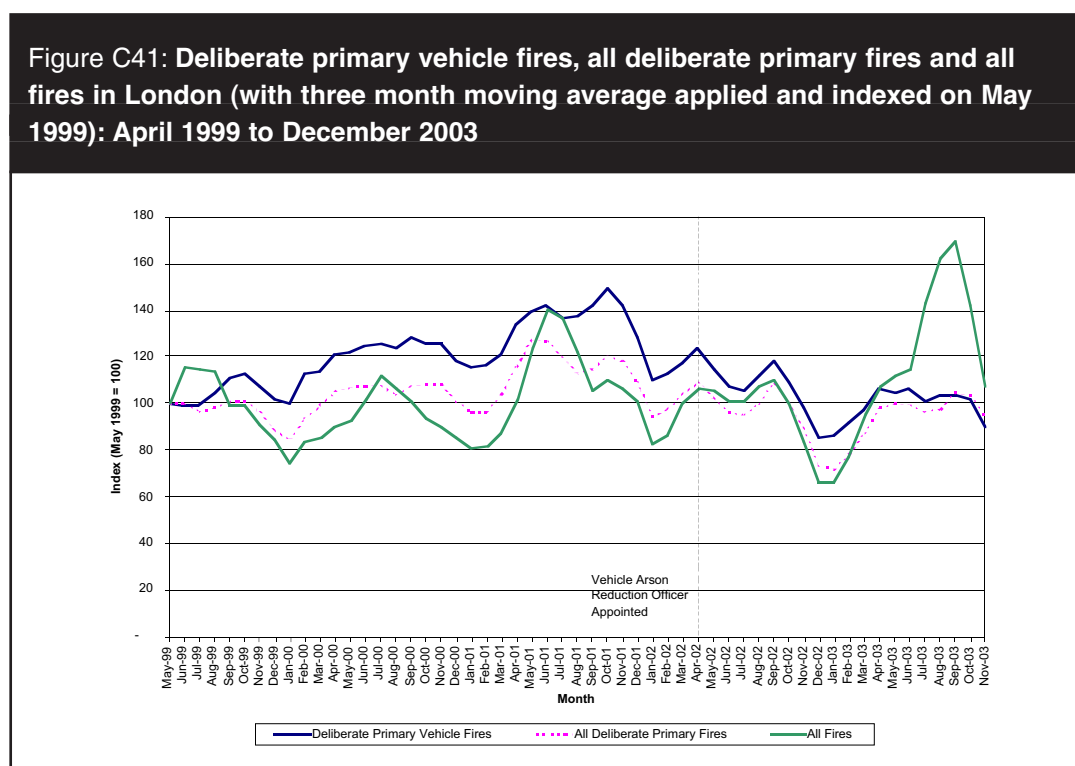


Figure C42 examines the trend in deliberate vehicle fires in London with the family group and with England and Wales as a whole. No specific comparison area was used as in other project because there was felt to be nowhere that matched the characteristics of London suitably. The chart shows that deliberate vehicle fires fell at a

faster rate in London than in England and Wales or in the family group. Although this reduction commenced before the start of the project, the size of the gap would appear to have increased following intervention.

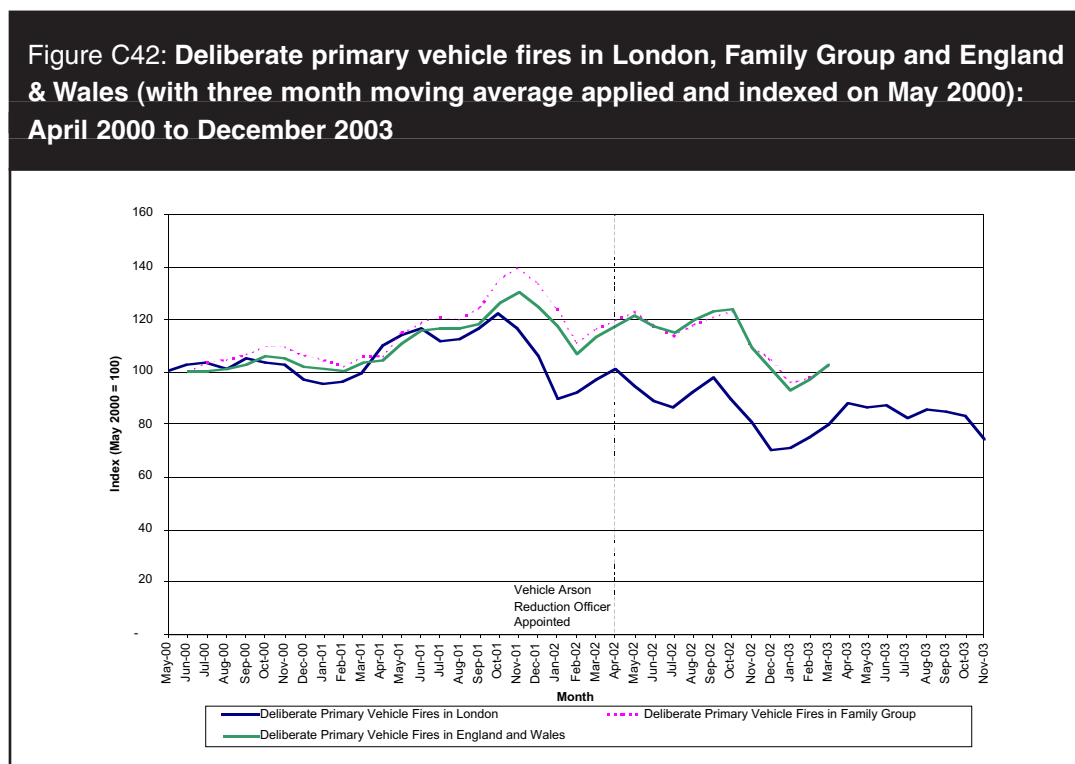


Table C65 examines the year prior to intervention with the year after the start of the project. This shows that London witnessed a statistically significant reduction of 22% following the start of the project, compared to much smaller reductions in the family group and nationally.

**Table C65: Number of deliberate primary vehicle fires in London, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> April 01 – Mar 02	<i>Post intervention</i> April 02 – Mar 03	<i>Percentage change</i>	<i>Significance</i>
London	5,683	4,456	-22	**
Family Group	33,313	30,099	-10	ns
England & Wales	73,695	69,224	-6	ns

\*\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

Table C66 provides an estimate of the scale of the reduction in deliberate primary vehicle fires. Based on the lowest estimate (compared to the family group) there were 659 fewer deliberate vehicle fires. Based on the highest impact estimate (compared to England and Wales) there were 886 fewer deliberate primary vehicle fires. These figures suggest that the appointment of an officer to concentrate on removing abandoned vehicles resulted in major reductions in fires.

**Table C66: Expected number of deliberate primary vehicle fires in London (April 2002 to March 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	5,115	5,342
Actual level	4,456	4,456
<b>Difference</b>	<b>-659</b>	<b>-886</b>

### *Deliberate primary school fires*

The schools officer was appointed in August 2002 and Figure C43 shows the trend in schools fires between April 1999 and December 2003. The most notable feature is the peak in summer of 2001, although after that time the trend has mostly been downwards. The trend line is more volatile to monthly fluctuations because of the smaller number of fires involved, compared to all deliberate fires and all fires.

**Figure C43: Deliberate primary school fires, all deliberate primary fires and all fires in London (with three month moving average applied and indexed on May 1999): April 1999 to December 2003**

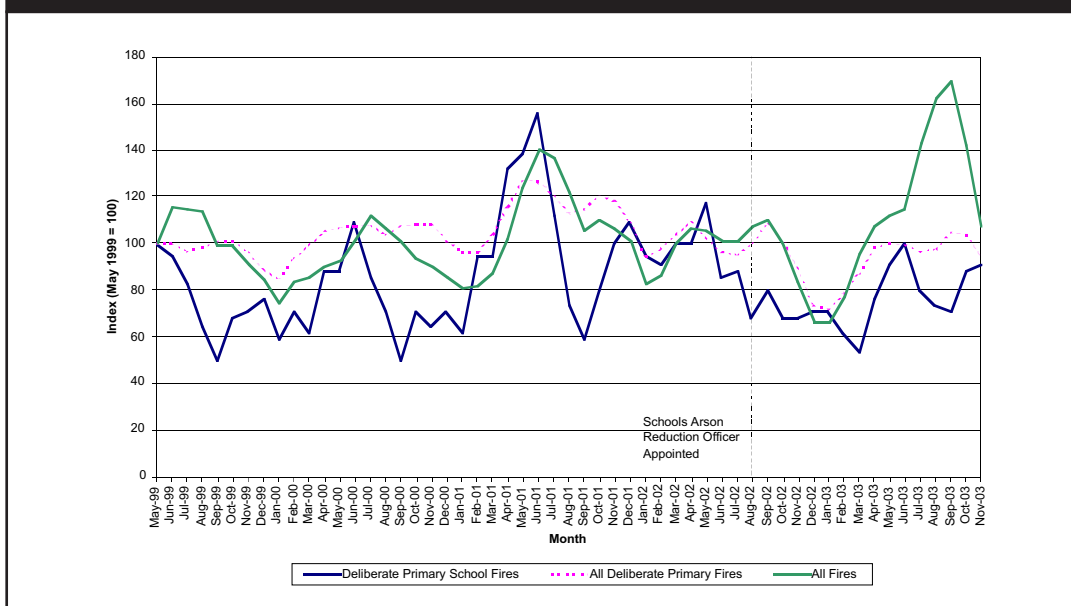


Figure C44 shows that the increase in deliberate primary fires in schools was higher in the family group than in London in the summer of 2001. Following the start of the project, schools fires appear to have increased at a faster rate in the family group and England and Wales than in London.

**Figure C44: Deliberate primary school fires in London, Family Group and England and Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

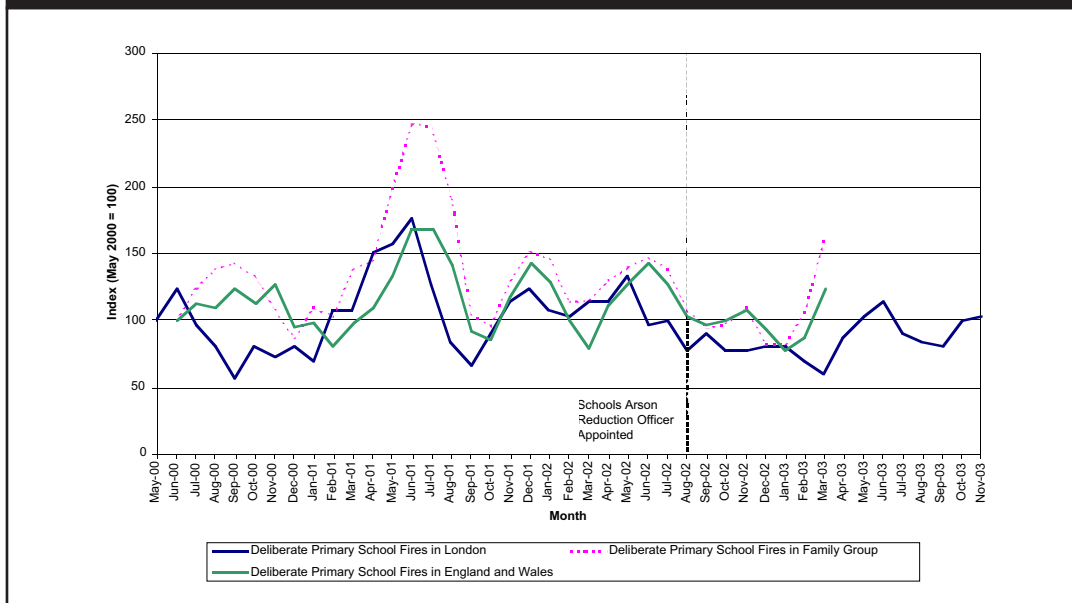


Table C67 examines the eight months following the start of the intervention with the same period the year before. A full year could not be analysed because the data for England and Wales / family group were only available up to end of March 2003. The analysis shows that London witnessed a 17% reduction (although not statistically significant). The reductions were much smaller elsewhere.

**Table C67: Number of deliberate primary school fires in London, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Aug 01 – Mar 02	<i>Post intervention</i> Aug 02 – Mar 03	<i>Percentage change</i>	<i>Significance</i>
London	76	63	-17	ns
Family Group	219	202	-8	ns
England & Wales	481	487	+1	ns

On the basis of the reduction in deliberate primary fires in schools in London, Table C68 estimated that there were between seven and 14 fewer incidents over the eight-month period.

**Table C68: Expected number of deliberate primary school fires in London (August 2002 to March 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	70	77
Actual level	63	63
<b>Difference</b>	<b>-7</b>	<b>-14</b>

### ***Deliberate primary fires***

The reductions in deliberate vehicle fires and in deliberate schools fires would appear to have contributed towards a reduction in deliberate fires overall. In the year following the start of the project, deliberate primary fires declined by 19%, compared to smaller reductions elsewhere.

<b>Table C69: Number of deliberate primary fires in London, Family Group and England and Wales pre / post intervention</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	April 01 – Mar 02	April 02 – Mar 03		
London	10,278	8,364	-19	**
Family Group	49,971	44,612	-11	ns
England & Wales	111,788	103,076	-8	ns

\*\* statistically significant at the 0.01 level, based on Mann Whitney U test.

Table C70 shows that the estimated impact on deliberate primary fires of all kinds was a reduction of between 783 and 1,092 fires, depending on whether the comparison is made to family group or national data respectively.

<b>Table C70: Expected number of deliberate primary fires in London (April 2002 to March 2003), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	9,147	9,456
Actual level	8,364	8,364
<b>Difference</b>	<b>-783</b>	<b>-1,092</b>

## **SUMMING UP THE IMPACT**

The establishment of the London Arson Task Force, Schools Officer and Vehicles Officer would appear to be associated with the following impacts:

- Deliberate primary vehicles fires declined by 22%, with between 659 and 886 fewer incidents in the year following intervention.
- Deliberate primary fires in schools declined by 17%, with between seven and 14 fewer incidents in the eight months following intervention.
- Deliberate primary fires of all kinds declined by 19%, with between 783 and 1,092 fewer fires in the year following intervention.

# Impact Analysis 14: Merseyside Ethnic Minority Awareness and Reduction Team

## OUTCOME DATA USED

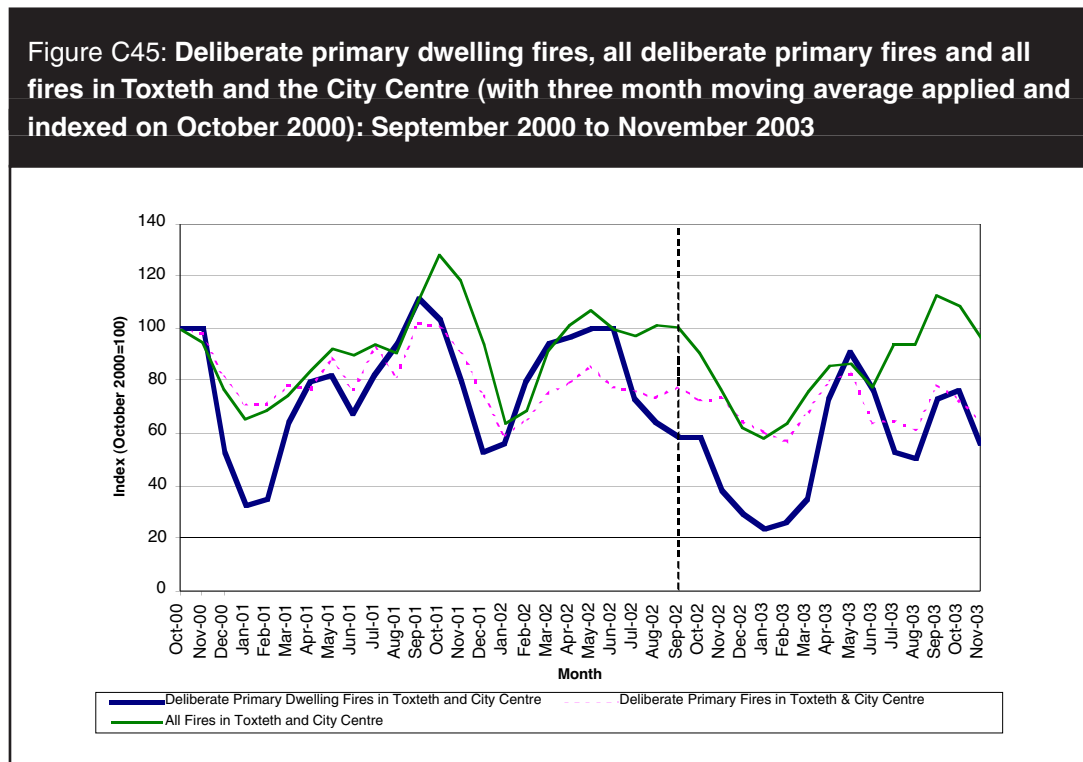
The outcome data used to assess the impact of the Merseyside Ethnic Minority Awareness and Reduction Team consisted of monthly aggregated data on all fires, all primary deliberate fires and primary deliberate fires in dwellings

## ANALYSIS OF IMPACT

The project was based upon promoting awareness of fire safety and arson to ethnic minority groups in Toxteth and Liverpool City Centre. The analysis here concentrates on primary deliberate fires in dwellings in Toxteth, Liverpool City Centre and Merseyside as a whole. These were broken down monthly between September 2000 and December 2003.

### *Deliberate primary dwelling fires in Toxteth and the city centre*

Figure C45 presents data on the number of deliberate primary dwelling fires, all primary deliberate fires and all fires in Toxteth and the city centre.



The figure shows that primary deliberate dwelling fires appeared to be falling from June 2002 (the project started in September 2002). These falls did appear to outpace the falls in all primary deliberate fires and all fires in Toxteth and the city centre at the same time. From February there was a sharp increase in primary deliberate dwelling fires which started to fall in May 2003.



Figure C46 compares the trend in primary deliberate fires in dwellings in Toxteth and the city centre to all the Rest of Merseyside, South Yorkshire, the family group and England and Wales. This shows that the trends replicate each other, though the number of Toxteth and the city centre is constantly lower than for all of Merseyside.

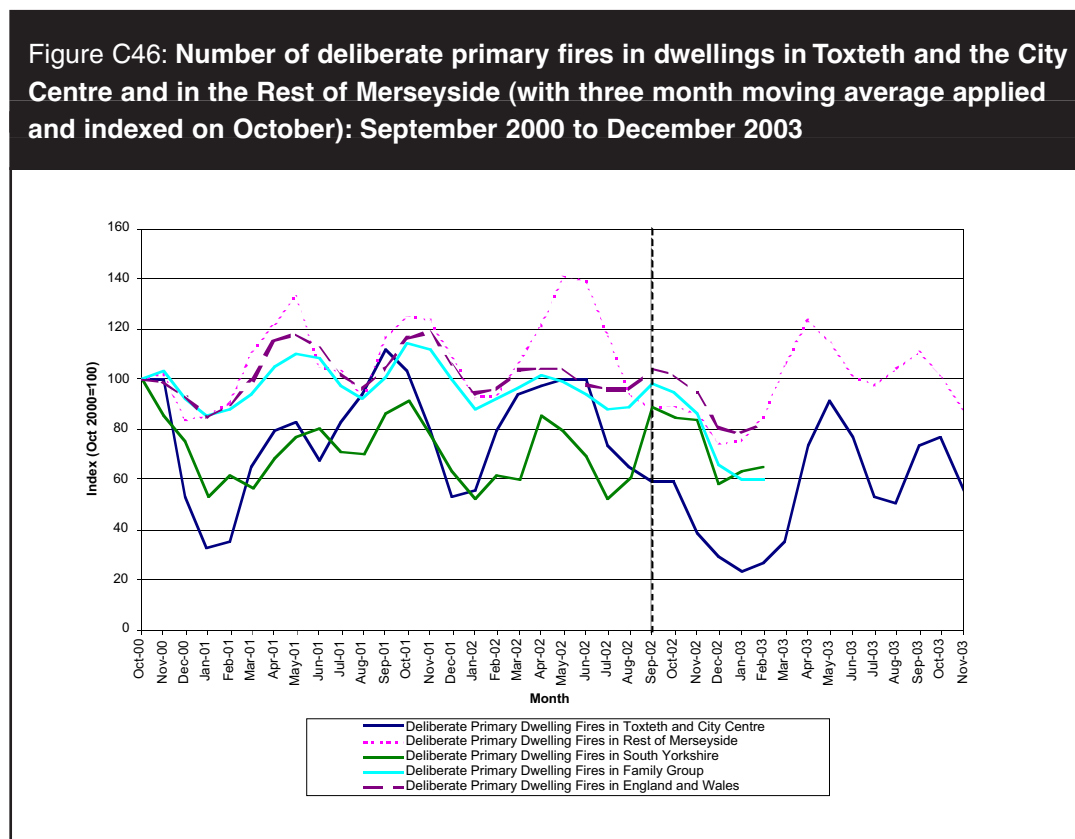


Table C71 considers the actual number of deliberate primary fires in dwellings in the project impact area as against the rest of Merseyside. This data are presented for the first seven months of the project (September 2002 to March 2003) as comparison data were not available after this period. The table shows that following the introduction of the project there was a statistically significant reduction in malicious fires of 36% in Toxteth and the City Centre. This reduction was greater than that observed in Merseyside as a whole, though reductions were also observed in the family group area and England and Wales. There was an increase in the comparison area of South Yorkshire.

**Table C71: Number of primary deliberate dwelling fires in Toxteth and the City Centre compared to the Rest of Merseyside, South Yorkshire, the Family Group and England and Wales pre and post intervention.**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sep 01- Mar 02	Sep 02-Mar 03		
Toxteth/ City Centre	66	32	-51	*
Rest of Brigade	532	424	-20	ns
South Yorkshire	210	220	+5	ns
Family Group	3,806	2,895	-24	ns
England & Wales	7,032	6,056	-14	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.

Table C72 makes an estimate of the impact of the project according to the data presented above. The highest impact estimate is based upon the increases of 5% observed in South Yorkshire for deliberate fires in dwellings. The lowest impact estimate is made from the 24% fall observed in the family group area.

<b>Table C72: Expected number of deliberate fires in dwellings in Toxteth and the City Centre (September 2002 to March 2003), the actual level and difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	51	69
Actual level	32	32
<b>Difference</b>	<b>-19</b>	<b>-37</b>

According to the estimate made above, the project could have helped to prevent between 19 and 37 deliberate dwelling fires in the Toxteth and city areas of Merseyside between September 2002 and March 2003.

### ***Deliberate primary fires***

Table C73 compares the overall number of primary deliberate fires of all types in Toxteth and the city centre against those for the rest of Merseyside, South Yorkshire, the Family group and England and Wales. This shows that there was a reduction in deliberate fires in Toxteth of -14%, the family group (21%) and England and Wales (16%) and across the rest of the brigade (7%). There were increases in such fires in South Yorkshire of 15%.

<b>Table C73: Number of deliberate primary fires of all kinds in Toxteth and City Centre, the Rest of Merseyside, South Yorkshire, Family Group and England and Wales.</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sep 01- Mar 02	Sep 02-Mar 03		
Toxteth/ City Centre	257	221	-14	ns
Rest of Brigade	3,003	2,796	-7	ns
South Yorkshire	2,088	2,393	+15	ns
Family Group	29,114	23,103	-21	ns
England & Wales	64,863	54,471	-16	ns

Table C74 makes an estimate of the overall impact of the project on deliberate primary fires. The highest impact estimate (using data from South Yorkshire) suggests that the project may have prevented 74 primary deliberate fires between September 2002 to March 2003. The lowest impact estimate (Family group) suggests that there might have been 17 fewer primary deliberate fires if the Toxteth and the city centre areas had followed the trend for the family group comparison.

**Table C74: Expected number of deliberate primary fires in Toxteth and the City Centre (September 2002 to March 2003), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	204	295
Actual level	221	221
<b>Difference</b>	<b>+17</b>	<b>-74</b>

## SUMMARY OF IMPACT

The project appears to have made an impact on primary deliberate dwelling fires in Toxteth and the city centre and in all primary deliberate fires across the brigade. In summary:

- There were large reductions in primary deliberate dwelling fires in the impact area (-51% - which is statistically significant). This reduction was larger than that of the rest of the brigade (-20%) and all other comparison groups used.
- There were larger falls in the impact area in all primary deliberate fires than for the rest of the brigade (-14% compared to -7%). There were, however, also large falls in such fires in the comparison groups used which suggests that the fall in all primary deliberate fires might be part of a larger trend.

# Impact Analysis 15: Mid & West Wales – Swansea Vehicle Arson Reduction Initiative (VARI)

## OUTCOME DATA USED

The outcome data used here consisted of deliberate vehicle fires, all deliberate fires and all fires. Both primary and secondary fires were included and these were broken down per month. Data were provided on both Swansea and Mid and West Wales Brigade. Comparison data were obtained for Stoke on Trent (selected as a similar type of area), for England and Wales and for the Brigade Family.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate primary vehicle fires and all primary fires as these reflect the kind of fires addressed by the Vehicle Arson Reduction Initiative.

### *Deliberate primary vehicle fires*

Figure C47 shows that deliberate vehicle fires have remained relatively stable over the entire period and are less susceptible to the seasonal fluctuations observed for fires in general. The trend in deliberate vehicle fires has tended to follow that for deliberate fires in general, with a steady downward trend. This trend appears to have started prior to the commencement of ACF funding in April 2001, although it should be noted that work was being undertaken throughout 2000 to address the problem.

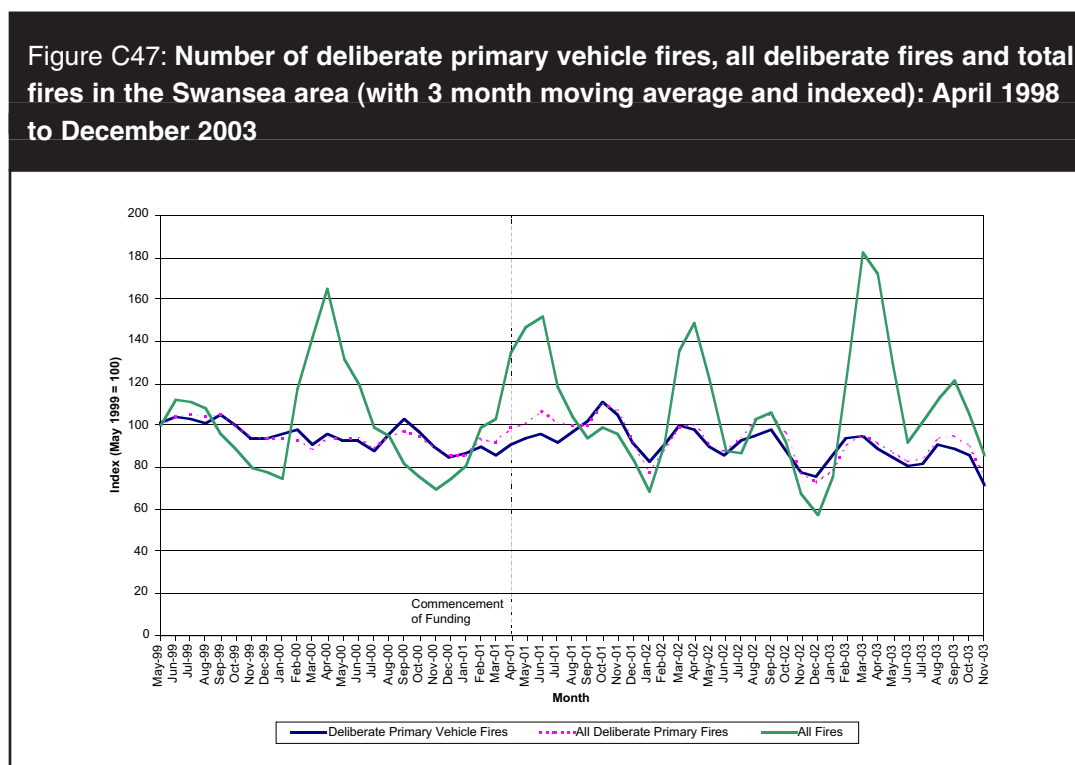


Figure C48 shows that the trend in deliberate vehicle fires in Swansea was below that in most other comparison areas, apart from for the rest of Mid and West Wales, where the trend was lower.

**Figure C48: Deliberate primary vehicle fires in Swansea, Stoke-On-Trent, Rest of Mid & WestWales, Family Group and England and Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

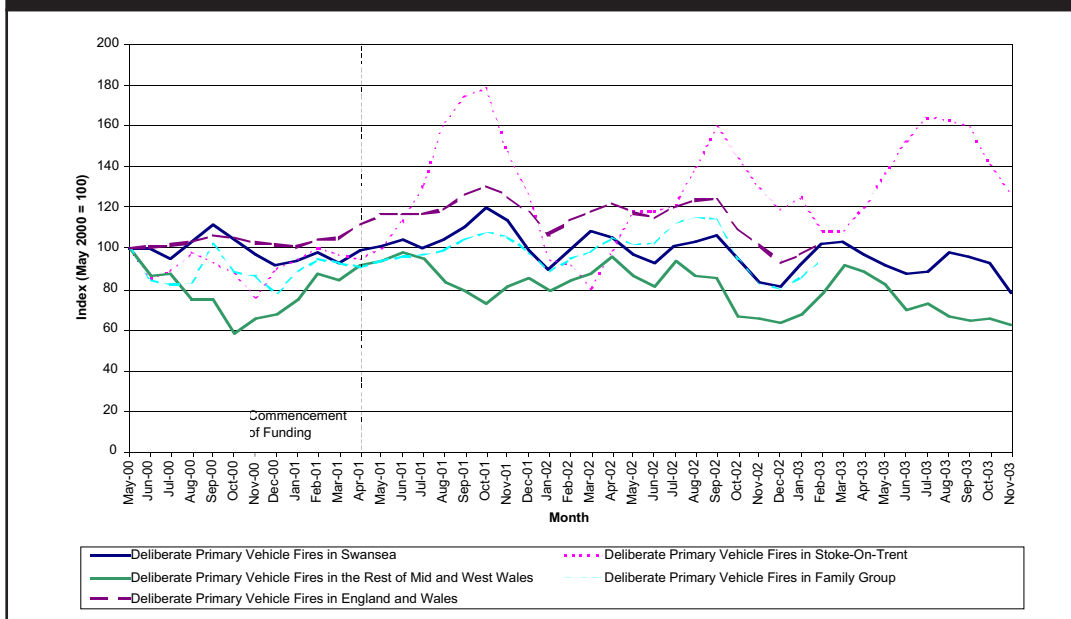


Table C75 shows that, in the year following intervention, the number of deliberate vehicle fires rose by 5% in Swansea. This increase was lower than in three of the four comparison areas selected. Only the rest of Mid and West Wales had a slower increase.

**Table C75: Number of deliberate primary vehicle fires in Swansea, Stoke-On-Trent, Rest of Mid & West Wales, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	April 00-Mar 01	Apr 01-Mar 02		
Swansea	893	938	+5	ns
Stoke-On-Trent	321	430	+34	*
Rest of Mid & West Wales	564	589	+4	ns
Family Group	4,327	4,676	+8	ns
England & Wales	63,679	73,695	+16	**

\* statistically significant at the 0.05 level, based on Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on Mann Whitney U test.

Table C76 shows the estimated impact of the project ranged from a slight increase of nine incidents, to 259 fewer incidents in the year following intervention.

**Table C76: Expected number of deliberate primary vehicle fires in Swansea (April 2001 to March 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	929	1,197
Actual level	938	938
<b>Difference</b>	<b>+9</b>	<b>-259</b>

### ***Deliberate primary fires***

Table C77 shows the impact on deliberate primary fires of all kinds. This shows a similar result to that for deliberate vehicle fires, with the increase in Swansea being lower than in three of the four comparison areas.

<b>Table C77: Number of deliberate primary fires in Swansea, Stoke-On-Trent, Rest of Mid &amp; West Wales, Family Group and England and Wales pre / post intervention</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	April 00-Mar 01	Apr 01-Mar 02		
Swansea	1,087	1,162	+7	ns
Stoke-On-Trent	449	645	+44	**
Rest of Mid & West Wales	858	896	+4	ns
Family Group	6,733	7,625	+13	ns
England & Wales	97,332	111,788	+15	**

\*\* statistically significant at the 0.01 level, based on Mann Whitney U test.

Table C78 shows that the estimated impact on deliberate fires of all kinds ranged from an additional 31 incidents to 403 fewer incidents.

<b>Table C78: Expected number of deliberate primary fires in Swansea (April 2001 to March 2002), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	1,131	1,565
Actual level	1,162	1,162
<b>Difference</b>	<b>+31</b>	<b>-403</b>

### **SUMMING UP THE IMPACT**

Following the start of the Swansea Vehicle Arson Reduction Initiative:

- Deliberate vehicle fires rose by 5%, which was slower than in three of the four comparison areas.
- The estimated impact on deliberate vehicle fires was between +9 and -259 incidents in the year following intervention.
- Deliberate primary fires of all kinds rose by 7% in the year following intervention, which was also slower than three of the four comparison areas.
- The estimated impact on deliberate primary fires of all kinds was between +31 and -403 incidents.

# Impact Analysis 16: North Wales – Wrexham Vehicle Arson Reduction Initiative (VARI)

## OUTCOME DATA USED

This analysis is based on monthly data for deliberate primary vehicle fires, total primary deliberate fires and total fires for Wrexham and for North Wales Fire Brigade as a whole. Comparisons were also made with Nuneaton as somewhere deemed similar, as well as with the Brigade family group and with England and Wales.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate primary vehicle fires and all primary fires as these reflect the kind of fires addressed by the Vehicle Arson Reduction Initiative.

### *Deliberate primary vehicle fires*

Figure C49 shows that prior to the introduction of the project, deliberate primary vehicle fires and deliberate primary fires in general, rose much more steeply than all fires. After peaking in the spring of 2001, the trend fell steadily until summer 2002, before seeing a slight rise in early 2003. Following the start of the project, deliberate primary vehicle fires declined, although this was part of a trend that started several months before.

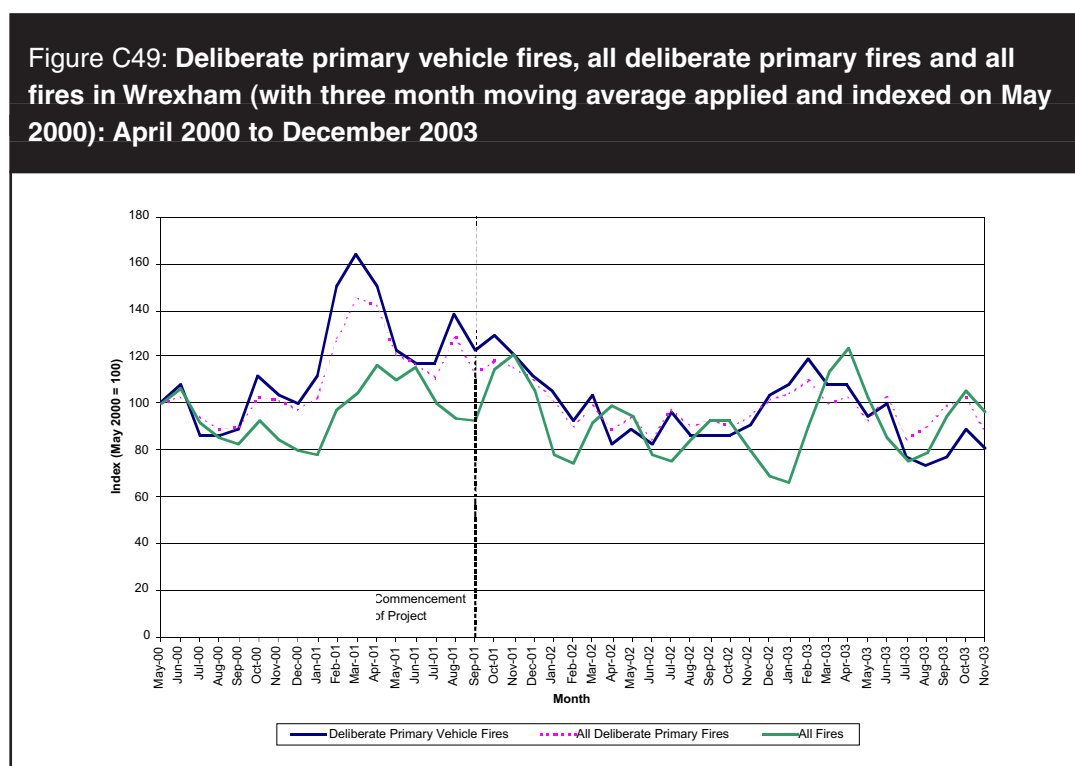


Figure C50 shows that, following the start of the project, there appeared to be a steeper decline in deliberate vehicle fires in Wrexham than in comparison areas – especially in the summer of 2003.

**Figure C50: Deliberate primary vehicle fires in Wrexham, Nuneaton and Bedworth, Rest of North Wales (excluding Wrexham and Rhyl<sup>46</sup>), Family Group and England and Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

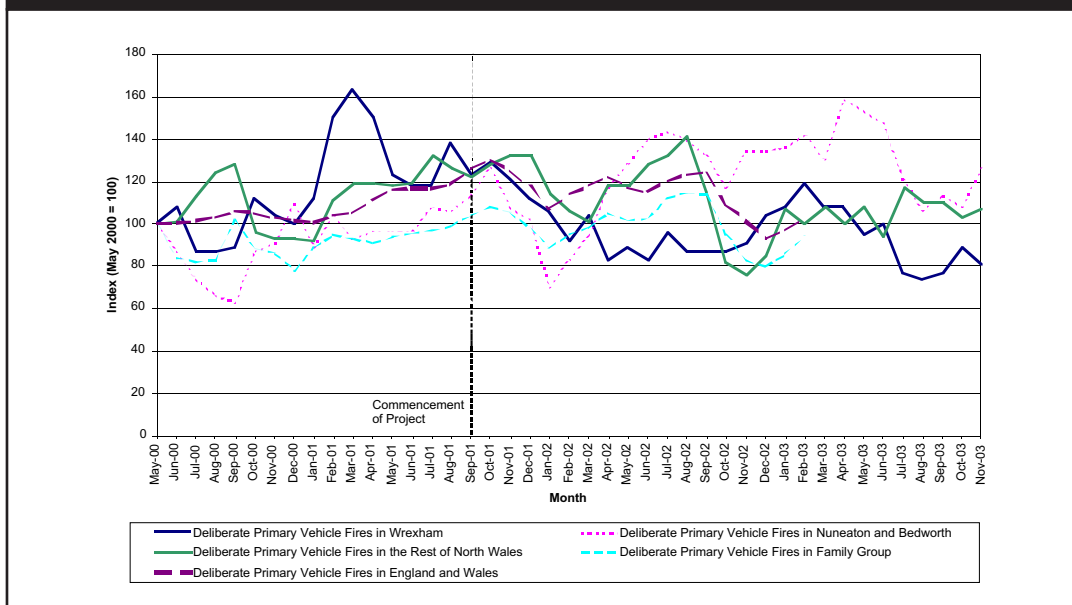


Table C79 shows that the deliberate primary vehicle fires in Wrexham declined by 16% (although not significant), while all of the comparison areas witnessed an increase.

**Table C79: Number of deliberate primary vehicle fires in Wrexham, Nuneaton and Bedworth, Rest of North Wales (excluding Wrexham and Rhyl), Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Sep 00 – Aug 01	<i>Post intervention</i> Sep 01 – Aug 02	<i>Percentage change</i>	<i>Significance</i>
Wrexham	255	215	-16	ns
Nuneaton & Bedworth	201	242	+20	ns
Rest of North Wales	312	350	+12	ns
Family Group	4,332	4,917	+14	*
England & Wales	67,449	74,560	+11	*

\* statistically significant at the 0.05 level, based on Mann Whitney U test.

Table C80 shows the estimated impact of the vehicle removal scheme in Wrexham. Based on the lowest estimate (in comparison to England and Wales) there were 68 fewer incidents. Based on the highest impact estimate (in comparison to Nuneaton) there were 91 fewer incidents.

<sup>46</sup> Rhyl conducted a small vehicle arson reduction initiative during the analysis period, so figures for this area have been excluded to avoid skewing the data.



**Table C80: Expected number of deliberate primary vehicle fires in Wrexham (September 2001 – August 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	283	306
Actual level	215	215
<b>Difference</b>	<b>-68</b>	<b>-91</b>

### ***Deliberate primary fires***

Table C81 shows the change in deliberate primary fires of all kinds in the year following the start of the project. There was a 12% reduction in Wrexham (although not significant), compared to increases in each of the four comparison sites, ranging from 4% to 19%.

**Table C81: Number of deliberate primary fires in Wrexham, Nuneaton and Bedworth, Rest of North Wales (excluding Wrexham and Rhyl), Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sep 00 – Aug 01	Sep 01 – Aug 02		
Wrexham	326	288	-12	ns
Nuneaton & Bedworth	278	331	+19	ns
Rest of North Wales	554	575	+4	ns
Family Group	6,940	7,748	+12	*
England & Wales	102,868	110,925	+10	ns

\* statistically significant at the 0.05 level, based on Mann Whitney U test.

Table C82 shows the estimated impact on deliberate primary fires in the year following the intervention. The lowest impact estimate (in comparison to the rest of North Wales) showed that there were 51 fewer incidents. The highest impact estimate (in comparison to Nuneaton) showed there were 100 fewer incidents.

**Table C82: Expected number of deliberate primary fires in Wrexham (September 2001 to August 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	339	388
Actual level	288	288
<b>Difference</b>	<b>-51</b>	<b>-100</b>

## **SUMMING UP THE IMPACT**

The Wrexham Vehicle Arson Reduction Initiative was associated with the following impacts:

- Deliberate vehicle fires declined by 16%, compared to increases in all four comparison areas.

- There were estimated to have been between 68 and 91 fewer deliberate primary vehicle fires in the year following intervention.
- Deliberate primary fires overall declined by 12%, compared to increases in all four comparison areas.
- There were estimated to have been between 51 and 100 fewer deliberate primary fires in the year following intervention.

# Impact Analysis 17: North Yorkshire – Community Risk Management Team

## OUTCOME DATA USED

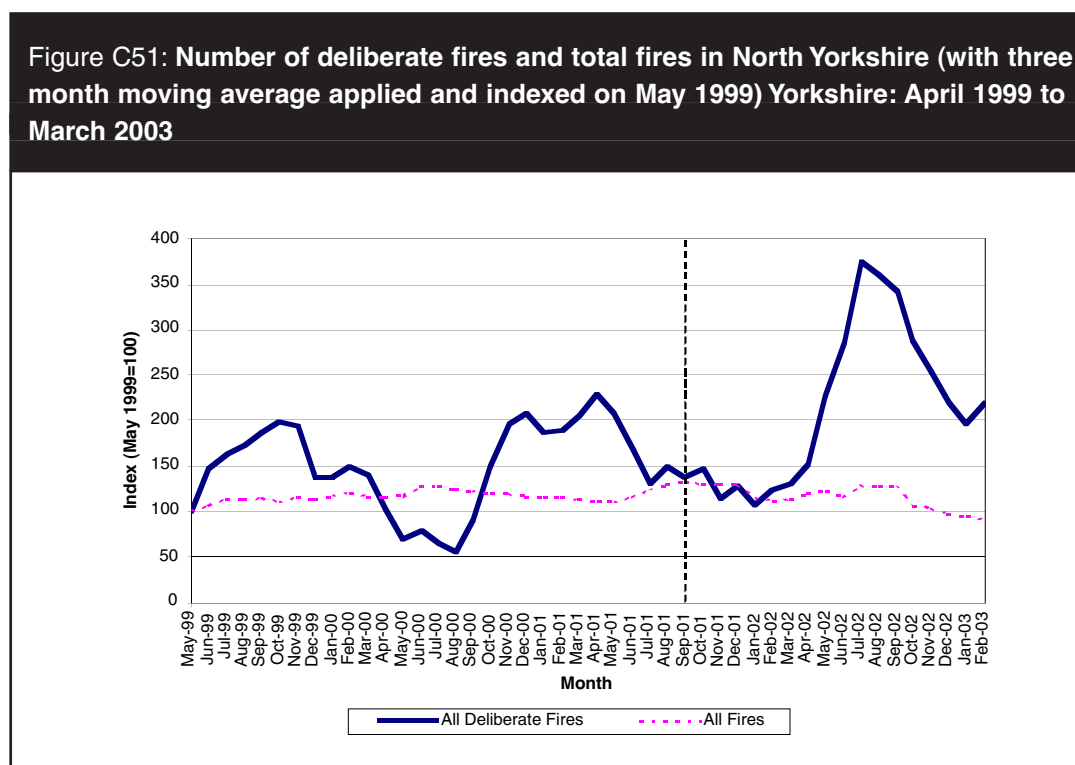
The outcome data used in this analysis was based on disaggregate data for all fires in the county. This was aggregated into monthly totals for all fires and for deliberate fires. Data is also presented for the city of York, which was a key focus area for the project.

## ANALYSIS OF IMPACT

The North Yorkshire Project was based around developing a community risk management team and began in earnest in September 2001. This was primarily based upon education and diversion programmes for young people, though some project activity was also based upon the identification of hotspot areas for deliberate fires. As many of aims of the project are based around long-term reductions in fires this is difficult to measure in this evaluation. However, as a key aim was also to reduce deliberate fires across North Yorkshire, some data is presented on the pattern of fires across the county.

### *Deliberate fires in North Yorkshire*

Figure C51 presents data for all fires and all deliberate fires across North Yorkshire. This shows that deliberate fires varied considerably, while all fires were relatively stable. Following the introduction of the project in September 2001 (denoted by line), there was an initial reduction, followed by a large increase in deliberate fires.



**Figure C52: All deliberate fires in North Yorkshire and Hereford and Worcester (with three month moving average applied and indexed on May 1999): April 1999 to March 2003**

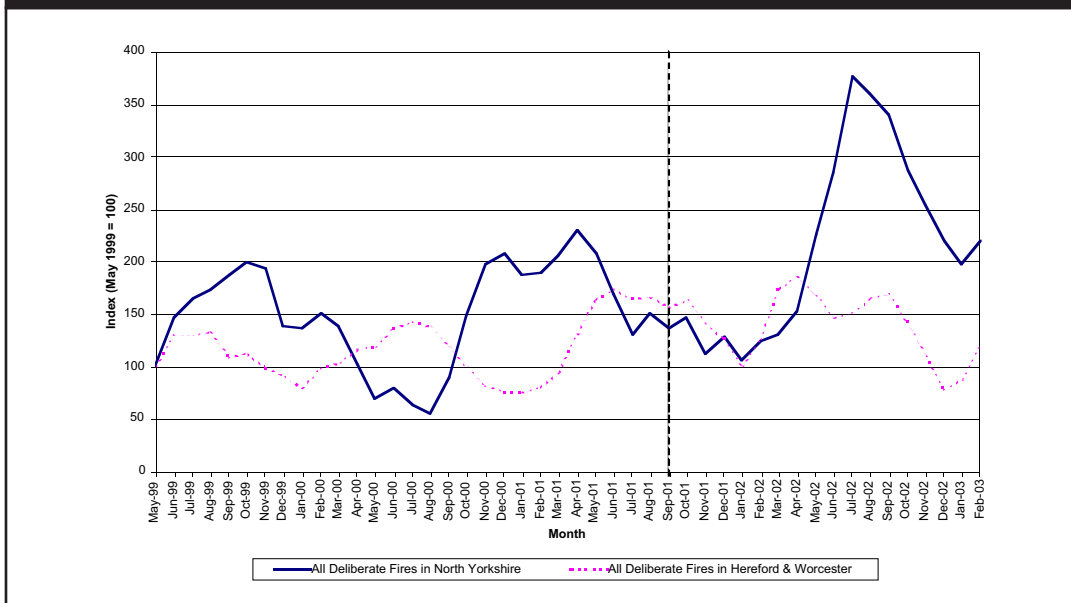


Figure C52 shows all deliberate fires in North Yorkshire and Hereford and Worcester (other comparisons cannot not be made here as the data presented is for all deliberate fires). Data for the actual number of deliberate fires are presented in Table C83 and shows that there were increases in the overall number of deliberate fires in North Yorkshire in the first year of the project (12%), though larger increases were observed in Hereford and Worcester (28%).

**Table C83: All deliberate fires in North Yorkshire, Hereford and Worcester, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sep 00 – Aug 01	Sep 01 – Aug 02		
North Yorkshire	495	555	+12	ns
Hereford & Worcester	1,941	2,479	+28	ns

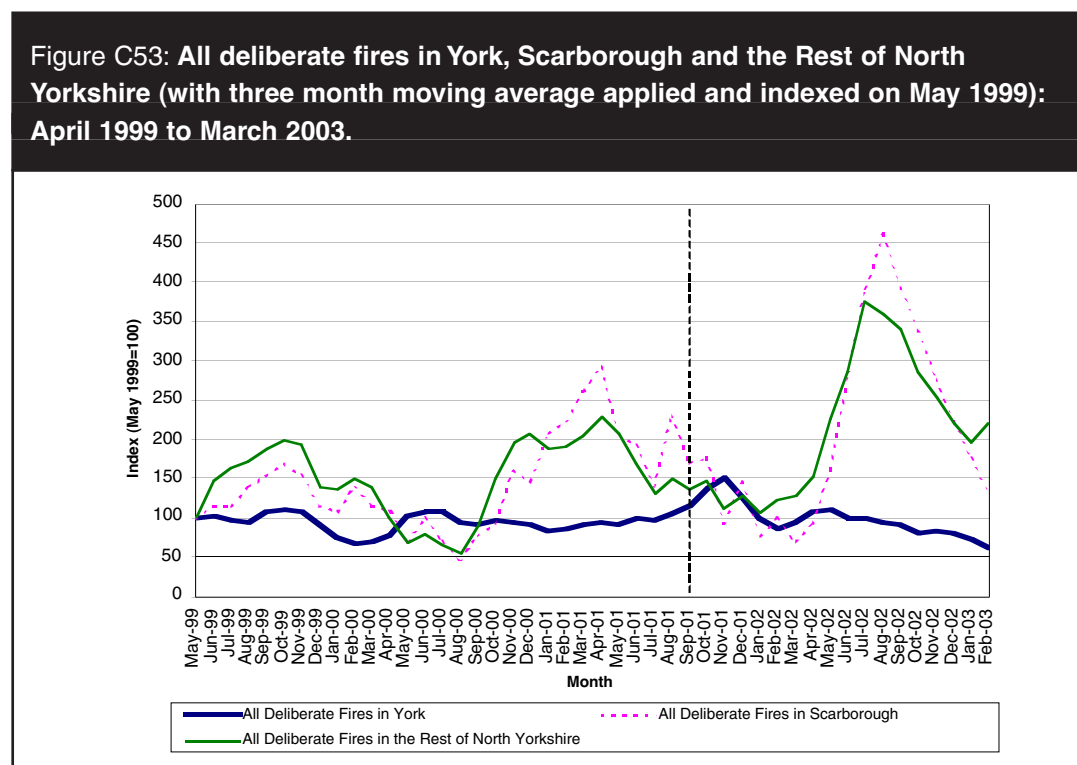
An estimate of the expected number of deliberate fires in North Yorkshire is presented in table C84 (below) by using data from Hereford and Worcester. This suggested that had it not been for intervention there might have been 634 deliberate fires in the county between September 2000 and August 2001. This is 79 more than the number recorded.

**Table C84: Expected number of deliberate fires in North Yorkshire (September 2001 to August 2002), the actual level and difference between them**

	<i>Impact Estimate</i>
Expected level	634
Actual level	555
<b>Difference</b>	<b>-79</b>

### *Deliberate fires in York*

Though the project aimed to reduce deliberate fires across the North Yorkshire brigade, there was a focus upon some specific areas such as York. Figure C53 (below) compares the number of deliberate fires in York to a comparison town of Scarborough and to the Rest of North Yorkshire. This shows that the pattern of deliberate fires in York remains fairly consistent with a steady fall after the start of the project. In Scarborough and in the whole brigade area, the pattern is variable though rises steadily after the start of the project.



The data for the actual number of deliberate fires in the York, Scarborough, and the rest of North Yorkshire (and additionally for the comparison area of Hereford and Worcester) is presented in Table C85. This shows that there was a reduction in the number of deliberate fires in York, though there were increases in Scarborough, the rest of North Yorkshire and Hereford and Worcester.

**Table C85: All deliberate fires in York compared to the Scarborough, the Rest of North Yorkshire, Hereford and Worcester, pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sep 00 – Aug 01	Sep 01 – Aug 02		
York	95	88	-7	ns
Scarborough	95	96	+1	ns
Rest of North Yorks	305	371	+21	ns
Hereford & Worcester	1,941	2,479	+27	ns

According to the data presented above we can make a prediction as to the number of deliberate fires that the project might have helped reduce in York (see Table C86). The data used for the impact assessment is from Hereford and Worcester where there was a 27% increase in deliberate fires over the intervention period and Scarborough where

there was a 1% increase. If such increases were experienced in York there would have been between 96 and 120 deliberate fires rather than the 88 recorded. This suggests that the project may have helped to prevent between 8 and 32 deliberate fires in York between September 2001 and August 2002.

<b>Table C86: Expected number of deliberate fires in York (September 2001 to August 2002), the actual level and difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	96	120
Actual level	88	88
<b>Difference</b>	<b>-8</b>	<b>-32</b>

### **SUMMING UP THE IMPACT**

The North Yorkshire project was primarily based upon delivering education and diversion programmes to young people. However, the overall aim was to reduce deliberate fires across the brigade and targeted in some areas (such as York). In summary we see that:

- There was an increase of 12 % in deliberate fires across the brigade in the first year of the project. In the same period there was a reduction in all fires of 3.7%.
- In York there was a reduction in deliberate fires of 7% over the first year of the project and an increase in all comparison areas.
- The project may have helped to prevent between 8 and 32 deliberate fires in York in the first year of the project.
- Overall, the message from North Yorkshire is fairly mixed, though the evidence from York suggests that concentrating on small geographical areas might have greater potential benefits than a brigade wide focus.

# Impact Analysis 18: Northumberland Arson Reduction Co-ordinator

## OUTCOME DATA USED

The outcome data used in this report was monthly aggregate data for vehicle fires, refuse fires, derelict building fires and all fires.

## ANALYSIS OF IMPACT

The project was based upon facilitating a variety of arson reduction activity through employing an arson reduction co-ordinator. Such activity included targeting vehicle fires, refuse fires and fires in derelict buildings.

### *Deliberate Vehicle Fires*

Figure C54 presents the pattern of deliberate<sup>47</sup> vehicle fires, all deliberate fires<sup>48</sup> and all fires in Northumbria from April 2000 to December 2003.

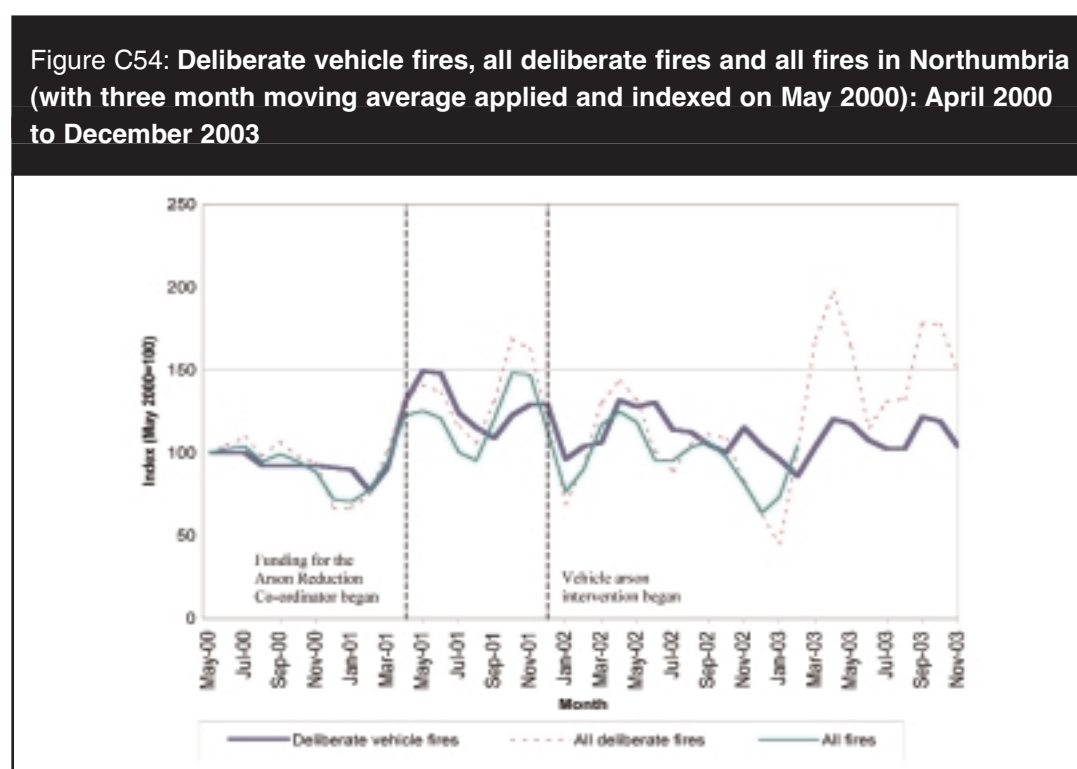


Figure C54 shows that the pattern of all deliberate fires, all fires and deliberate vehicle fires is similar across Northumbria from April 2000. The only departure from this trend is from January 2003 when there appears to be a sharp rise in all deliberate fires.

Figure C55 outlines the number of deliberate vehicle fires in Northumbria and the comparison group (Somerset)<sup>49</sup>.

- <sup>47</sup> The data supplied was not split into primary and secondary fires – as such deliberate vehicle fires refer to BOTH primary and secondary deliberate vehicle fires.
- <sup>48</sup> The data supplied was not split into primary and secondary fires – as such deliberate fires refer to BOTH primary and secondary deliberate fires.
- <sup>49</sup> As data for England and Wales (including the Family Group data) does not contain secondary deliberate fires – comparisons to this data were not made.

**Figure C55: Number of deliberate vehicle fires in Northumbria and Somerset, (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

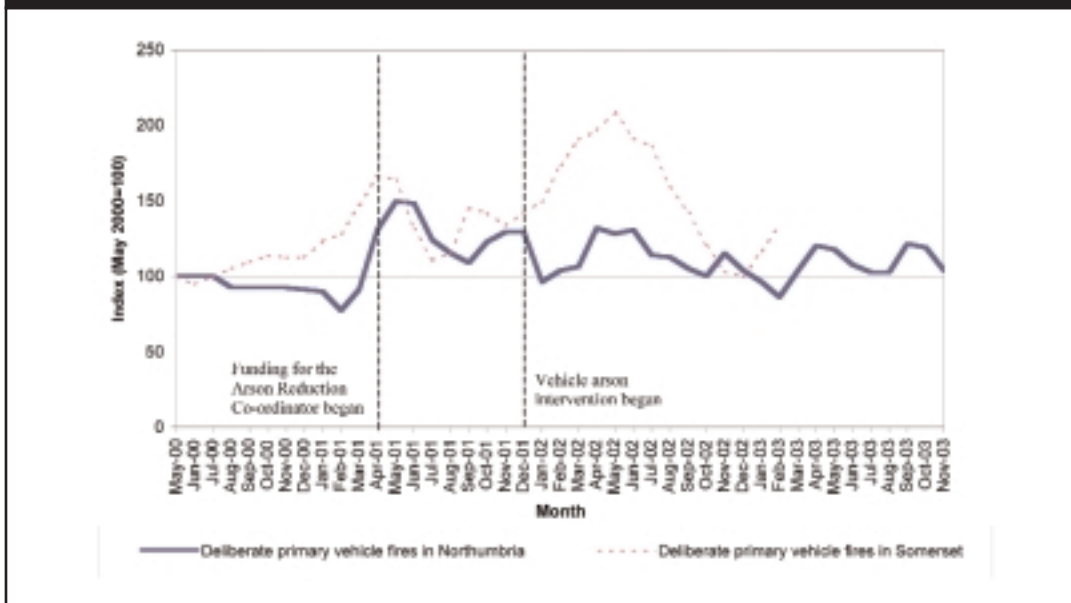


Figure C55 shows that, where deliberate vehicle fires were concerned, there appears to be little change before / after intervention in Northumbria. These patterns are explored for the *actual* number of vehicle fires in these four areas for the pre-intervention period of the project as against the first project impact year in Table C87.

**Table C87: Number of deliberate vehicle fires in Northumberland and Somerset pre / post intervention**

	<i>Pre intervention</i> Dec 00- Nov 01	<i>Post intervention</i> Dec 01 – Nov 02	<i>Percentage change</i>	<i>Significance</i>
Northumbria	369	349	-5.4	ns
Somerset	527	741	+41	ns

The table shows that there was a decrease in deliberate vehicle fires in Northumbria (by 5.4%). There was an increase of 41% in deliberate vehicle fires in the comparison area. Table C88 shows the expected level of vehicle fires based on the figures from Somerset.

**Table C88: Expected number of deliberate vehicle fires in Northumbria (December 2001 to November 2002), the actual level and difference between them**

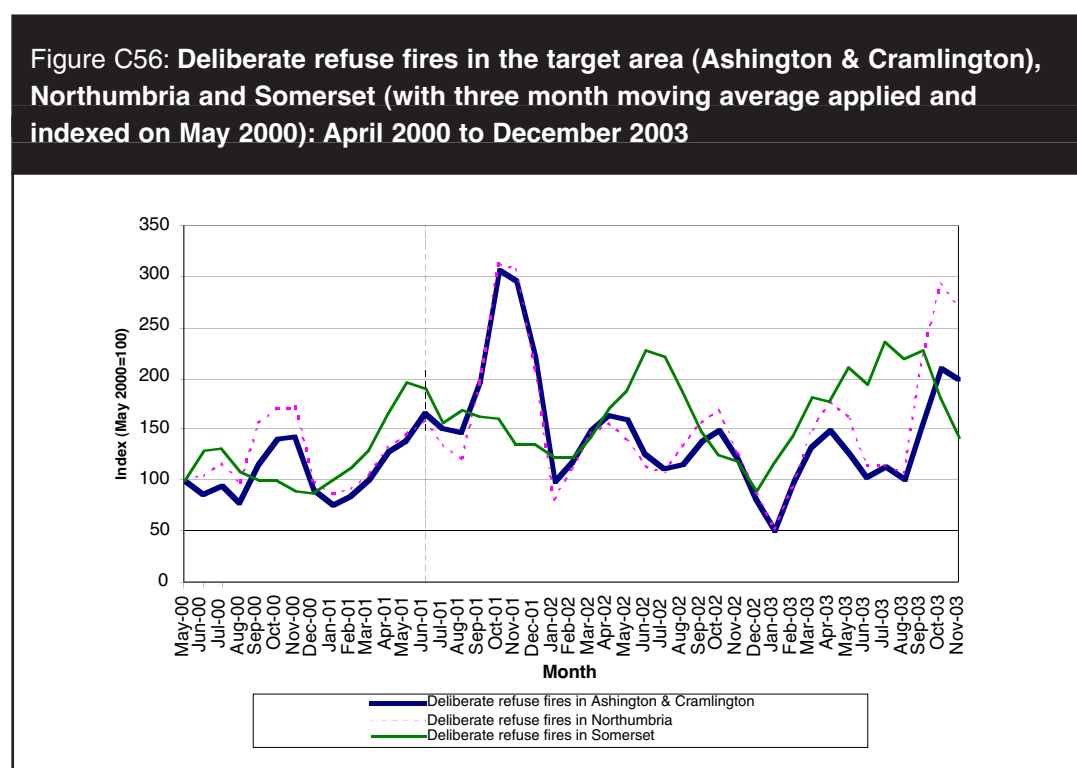
	<i>Impact Estimate</i>
Expected level	520
Actual level	349
<b>Difference</b>	<b>-171</b>

On this basis, we can conclude that interventions implemented to reduce deliberate vehicle fires resulted in 171 fewer deliberate vehicle fires across Northumbria between December 2001 and November 2002.



### Deliberate refuse fires

Another main project intervention was concentrated on refuse fires in key target areas such as Ashington and Cramlington. Figure C56 outlines the pattern of deliberate refuse fires in the target areas as against the rest of Northumbria and the comparison area of Somerset.



Here we see that that deliberate refuse fires in the target area followed a similar pattern to the brigade as a whole, though after the project intervention (in June 2001 – denoted by the dotted line) there appears to be generally fewer fires than in the preceding 12 months. It should be noted that there were some increases in the number of refuse fires in the impact and brigade area after September 2003. The overall pattern in the comparison group area appears more stable, though there are slight increases in Somerset after May 2002.

The patterns observed in Figure C57 are explored according to the *actual* number of fires in Table C89. The presents the number of deliberate refuse fires for the target area, Northumbria and Somerset for the pre-intervention year and the first year of intervention<sup>50</sup>.

**Table C89: Number of deliberate refuse fires in Ashington & Cramlington, Northumbria and Somerset pre / post intervention.**

	<i>Pre intervention</i> Jun 00- May 01	<i>Post intervention</i> Jun 01- May 02	<i>Percentage change</i>	<i>Significance</i>
Ashington & Cramlington	581	373	-36	ns
Northumbria	1,029	618	-40	ns
Somerset	449	523	+16	ns

<sup>50</sup> As data for England and Wales (including the Family Group data) does not contain secondary deliberate fires – comparisons to this data were not made.

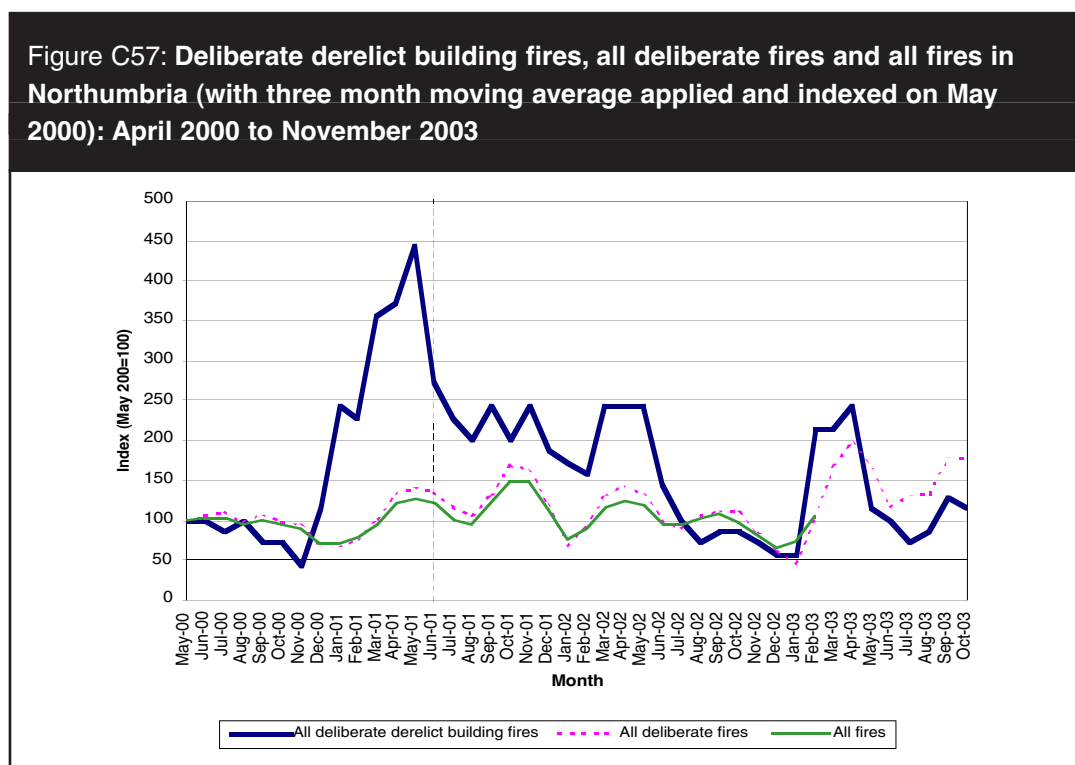
The table shows large reductions in refuse fires across Ashington & Cramlington and for Northumbria (-36 and -40 respectively). Increases of 16% are observed for Somerset.

Table C90: Expected number of deliberate refuse fires in Ashington & Cramlington area (June 2001- May 2002), the expected level and difference between them.		
	<i>Lowest impact estimate</i>	<i>Highest Impact Estimate</i>
Expected level	349	673
Actual level	373	373
<b>Difference</b>	<b>+24</b>	<b>-300</b>

Table C90 outlines the expected and actual number of refuse fires according to the lowest estimate of impact (Brigade area -40%) and the highest (Somerset +16%). Using this convention, the lowest impact estimate suggests that without intervention there would have been 349 refuse fires in the first year of the project and thus if the project had not of run there would have been fewer fires. The highest estimate of impact suggests there would have been 673 refuse fires and therefore that there would have been 300 fewer fires in the area. Therefore, it is not conclusive that project intervention led to the reduction in refuse fires in the impact area.

***Deliberate derelict buildings fires***

The final strand of the project that is quantifiably measurable, related to the reduction of fires in derelict buildings. This intervention began in June 2001. Figure C57 presents data for all derelict buildings fires across the brigade, all deliberate fires and all fires. This shows that the number of deliberate derelict buildings fires peaked in May 2001 and continued to fall after the beginning of the intervention in June 2001.



**Figure C58: Deliberate derelict buildings fire in Northumberland and Somerset (with three month moving average and indexed in May 2000): April 2000 to November 2003.**

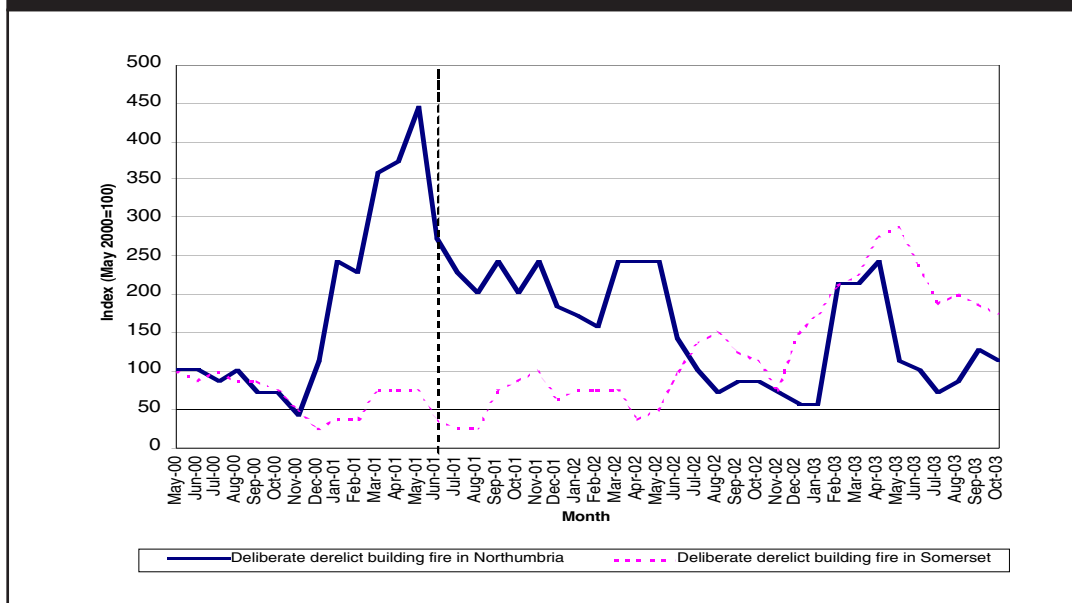


Figure C58 shows substantial reduction in derelict buildings fires over the course of the project for the impact area whereas fires have steadily risen for the comparison area. The only deviation to the trend is in early 2002 and early 2003 where there are slight increases. It should be noted here that the actual number of derelict building fires is particular low and the trend is affected by as few as 1-2 fires occurring over the period of a month.

A comparison of the actual number of fires for the pre-intervention year as compared to the post impact year is presented in Table C91 for Northumbria and Somerset.

**Table C91: Number of deliberate derelict building fires in Northumbria and Somerset pre / post intervention**

	<i>Pre intervention</i> June 00- May 01	<i>Post intervention</i> June 01- May 02	<i>Percentage change</i>	<i>Significance</i>
Northumbria	54	59	+9	ns
Somerset	23	18	-18	ns

Table C91 shows that in the first impact year, in Northumbria there was actually an increase in derelict building fires by 9% (in the second impact year (June 2002 to May 2003) there was a decrease in derelict buildings fires of 42%). In the comparison area there was a fall of 18% in derelict building fires in year one (further analysis revealed a massive rise of 211% in year two). This evidence suggests that there has been some impact in the project area.

**Table C92: Expected number of deliberate derelict building fires in Northumbria (June 2001 to May 2002), the actual and the difference between them**

	<i>Impact estimate</i>
Expected level	44
Actual level	59
<b>Difference</b>	<b>+15</b>

***Deliberate fires***

Table C93 considers the overall impact of the project on deliberate fires. This compares all deliberate fires in the county for a pre-project year (April 2000 to March 2001) to the first year of intervention. This is compared to deliberate fires in Somerset.

**Table C93: Number of deliberate fires of all kinds in Northumbria, Somerset, Family Group and England and Wales.**

	<i>Pre intervention</i> April 00 – Mar 01	<i>Post intervention</i> April 01 – Mar 02	<i>Percentage change</i>	<i>Significance</i>
Northumbria	1,632	2,227	+36	ns
Somerset	1,028	1,549	+51	ns

The table shows that there was an increase in deliberate fires of 36% in the first year of the project (this did fall by 16% to 1,873) in the second year of the project. In the comparison area of Somerset there was an increase in deliberate fires of 51%.

Table C94 (below) considers the overall impact of the project on deliberate fires between April 2001 and March 2002. According to the comparison data the expected number of deliberate fires over the period could have been 2,464 which a total of 237 above the observed number.

**Table C94: Expected number of deliberate fires in Northumbria (April 2001- March 2002), the actual level and the difference between them**

	<i>Impact estimate</i>
Expected level	2,464
Actual level	2,227
<b>Difference</b>	<b>-237</b>

**SUMMING UP THE IMPACT**

In Northumberland, the project would appear to have had some impact on deliberate vehicle fires and derelict buildings fires, though the impact upon refuse fires is less conclusive. In summary:

- Deliberate vehicle fires fell by 5.4% between December 2001 and November 2002. This was a faster fall than in the comparison areas. It is estimated that might have led 171 fewer vehicle fires over this period in Northumbria.

- There was a fall in refuse fires in the impact area of 36% between June 2002 and May 2003. However, there was also a reduction of 40% across the brigade over the same period.
- There was a reduction in derelict buildings fires between June 2002 and May 2003 of 42%.
- Overall, there was an increase in deliberate fires in year one of the project (by 36%), but a reduction in year two of 16%.

# Impact Analysis 19: Shropshire Extinguishing Arson Project

## OUTCOME DATA USED

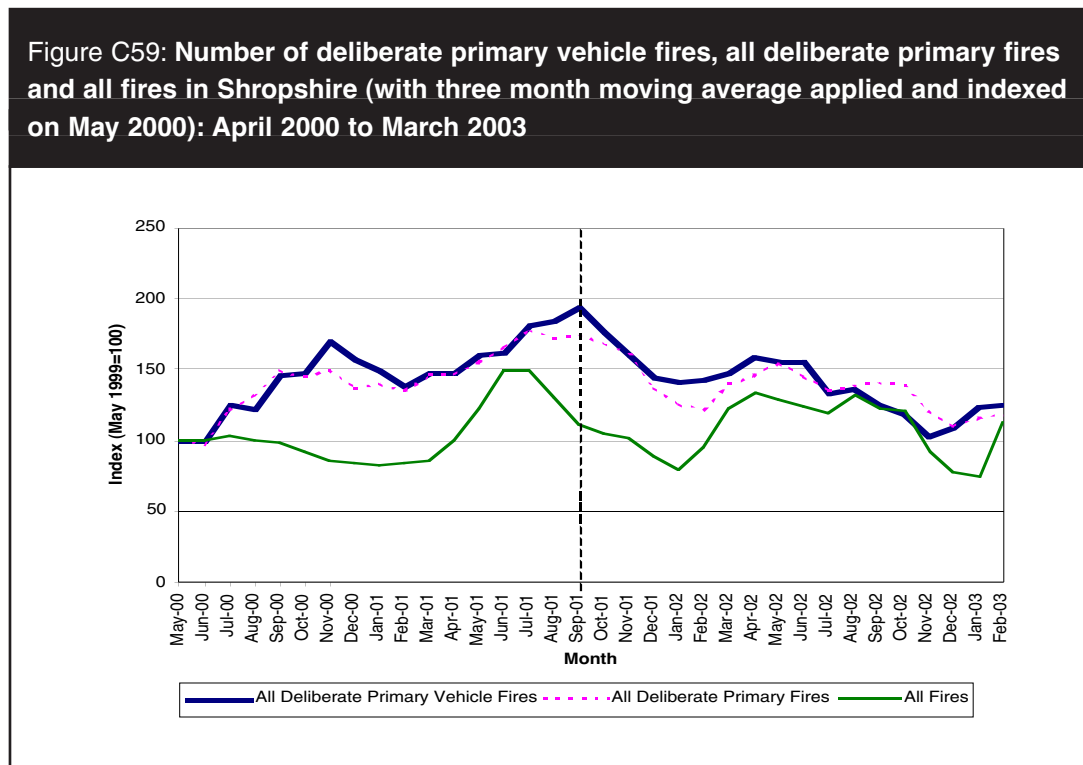
The data used in this analysis consisted of deliberate primary fires for Shropshire, broken down by premises type. Figures on all fires (both primary and secondary) were also used.

## ANALYSIS OF IMPACT

The extinguishing arson project was based upon targeting vehicles and premises where high numbers of deliberate incidents were recorded. The primary focus was on an overall reduction in deliberate fires though reducing vehicle fires, fires in schools, and fires in businesses and farms. The project began in September 2001. Data were broken down by month from September 1999 to March 2003 and where possible comparisons are made from the 12 months preceding the project against the 12 months after.<sup>51</sup>

### *Deliberate primary vehicle fires*

Figure C59 compares the number of deliberate primary vehicle fires, all deliberate primary fires and all fires across Shropshire for the period April 2000 to March 2003.



The figure shows a similar pattern for all fires, total deliberate fires and deliberate vehicle fires. Here, we see that there is a steady increase that rises to a peak between August and September 2001. After the start of the project, there appears to be a general reduction (in such fires to March 2003).

<sup>51</sup> Data were not available for this project after March 2003.

If the pattern of deliberate primary vehicle fires for Shropshire is compared to that for the comparison area of Gloucestershire, the family group and England and Wales, similar patterns are observed. Here, there is a general increase in all areas before September 2001 and, after this period, a fall (see Figure C60).

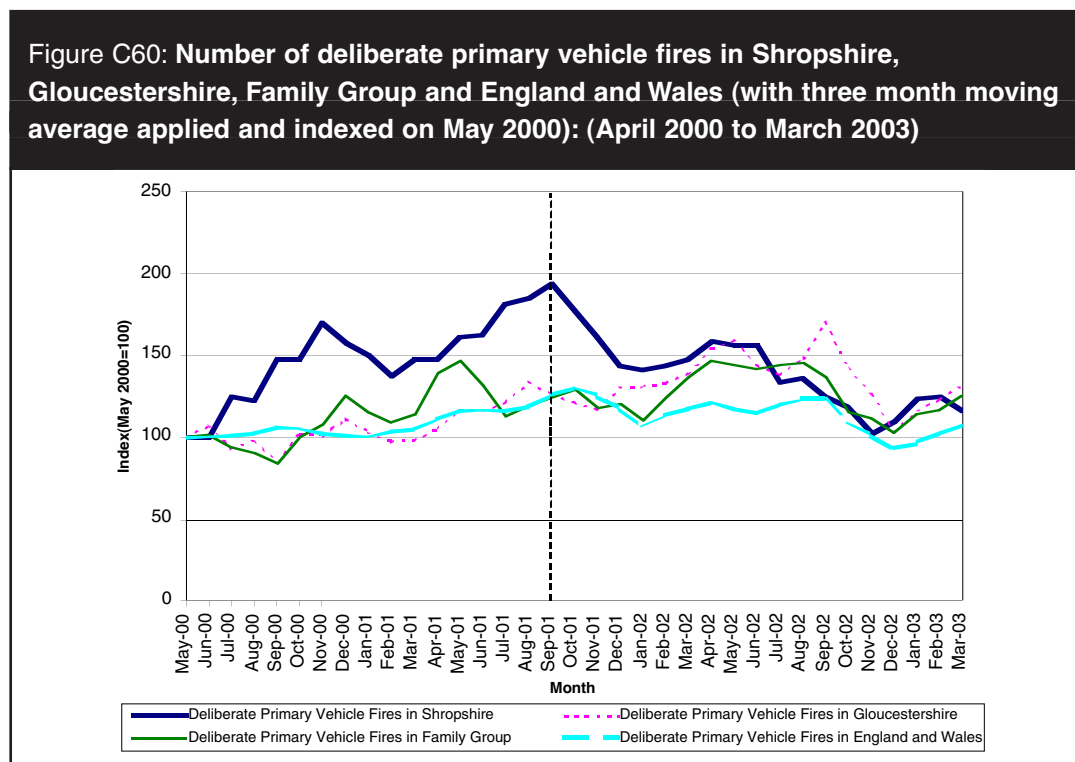


Table C95 considers the actual number of deliberate primary vehicle fires in Shropshire, Gloucestershire, the family group and England and Wales for the 12 months before the start of the project (September 2000 to August 2001) and the first 12 months of the project.

**Table C95: Number of deliberate primary vehicle fires in Shropshire, Gloucestershire, Family Group and England and Wales pre / post intervention.**

	<i>Pre intervention</i> Sep 00- Aug 01	<i>Post intervention</i> Sep 01- Aug 02	<i>Percentage change</i>	<i>Significance</i>
Shropshire	495	482	-3	ns
Gloucester	431	544	+26	ns
Family Group	2,629	2,977	+13	ns
England & Wales	67,449	74,560	+10.5	ns

The table shows that when compared to Gloucester, the family group and England and Wales, Shropshire is the only area where there was a reduction in deliberate primary vehicle fires between September 2001 and August 2002. The highest overall increase was in the Gloucester comparison area where there was an increase of 26%.

When considering the overall expected number of deliberate primary vehicle fires in the area compared to the actual number (using data from Gloucester for the highest impact and England and Wales for the lowest impact) we see that the project could have reduced between 65 and 141 deliberate primary vehicle fires.

**Table C96: Expected number of deliberate primary vehicle fires in Shropshire (September 2001- August 2002), the actual level and difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected	547	623
Actual	482	482
<b>Difference</b>	<b>-65</b>	<b>-141</b>

***Deliberate primary school fires***

There was also a variety of other project activity that focused upon the reduction fires in schools, businesses and farms. There were a low number of primary deliberate school fires in the pre-project year (10 in total). In the first year of the project there were no primary deliberate schools fires (therefore, a graph showing trend data is not presented). Additional analysis revealed that there was only one school fire in the second project year. Such low numbers make any meaningful comparison with other areas difficult, though Table C97 presents data on school fires for Shropshire, Gloucester, the family group and England and Wales. This shows that in Shropshire there was a 100% reduction between September 2001 and August 2002, with a reduction of 10% in Gloucester and a 7% reduction in England and Wales. There was an increase in the family group area of 70%.

**Table C97: Primary Deliberate School fires in Shropshire compared to Gloucestershire, the brigade family group and England and Wales: September 2000 to August 2001 and September 2001 to August 2002.**

	<i>Pre intervention</i> Sep 00- Aug 01	<i>Post intervention</i> Sep 01- Aug 02	<i>Percentage change</i>	<i>Significance</i>
Shropshire	10	0	-100	**
Gloucester	10	9	-10	ns
Family Group	20	34	+70	*
England & Wales	863	802	-7	ns

\* statistically significant at the 0.05 level, based on the Mann Whitney U test.  
\*\* statistically significant at the 0.01 level, based on the Mann Whitney U test.

Table C98 outlines the predicted impact of the project on the reduction of school fires by using data from the family group for the highest impact estimate and Gloucester for the lowest impact estimate. This suggests that the project helped to reduce between 9 and 17 primary deliberate fires in schools between September 2001 and August 2002.

**Table C98: Expected number of deliberate primary school fires in Shropshire (September 2001- August 2002), the actual level and difference between them**

	<i>Lowest Impact Estimate</i>	<i>Highest Impact Estimate</i>
Expected	9	17
Actual	0	0
<b>Difference</b>	<b>-9</b>	<b>-17</b>



***Deliberate primary farm fires***

The data for farm fires and business fires are presented for only the project area due to limitations on the availability of comparison data. Where deliberate primary farm fires were concerned data are presented for the first seven months of the project (September 2001 to March 2003) as against the same seven months of the pre-project year and the second year of the project. Table C99 shows that an initial reduction in the first year of the project (-7%) followed by no change in the second year.

**Table C99: Number of deliberate primary farm fires in Shropshire and percentage change: September 2000 to March 2003**

<i>Period</i>	<i>Farm fires</i>	
	<i>Number</i>	<i>Percentage Change</i>
September 2000 to March 2001	15	
September 2001 to March 2002	14	-7
September 2002 to March 2003	14	0

***Deliberate primary business fires***

In business premises (Table C100) there was a decrease in primary deliberate fires in the first seven months of the project (-30%) followed by an increase in the second year.

**Table C100: Number of deliberate primary business fires in Shropshire and percentage change: September 2000 to March 2003**

<i>Period</i>	<i>Business fires</i>	
	<i>Number</i>	<i>Percentage Change</i>
September 2000 to March 2001	20	
September 2001 to March 2002	14	-30
September 2002 to March 2003	27	+92

***Deliberate primary fires***

Table C101 presents the data for the overall number of primary deliberate fires for the pre-project year against the first year of the project for the brigade, the comparison area (Gloucestershire), brigade family group and for England and Wales. This shows that there were rises in primary deliberate fires in all areas except for Shropshire where there was a fall of -13%.

**Table C101: Number of deliberate primary fires in Shropshire, Gloucestershire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Sept 00-Aug 01	Sep 01-Aug 02		
Shropshire	829	784	-13	ns
Gloucestershire	651	835	+28	ns
Family Group	3,726	4,633	+24	ns
England & Wales	102,868	110,925	+8	ns

By using the data above, an estimate of the impact of the project on reducing deliberate fires can be made. Table C102 outlines what the expected number of fires would have been without project intervention and using a highest and lowest impact estimate it can be predicted how many fires were prevented. The highest impact estimate is made by using data from Gloucester (where there was an increase of 28%) and the lowest impact estimate is made by using data from England and Wales (where there was an increase of 8%).

<b>Table E36: Expected number of deliberate fires in Shropshire (September 2001-August 2002), the actual level and difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected	893	1061
Actual	784	784
<b>Difference</b>	<b>-109</b>	<b>-280</b>

The impact assessment suggests that the project may have helped to prevent between 109 and 280 deliberate primary fires in Shropshire between September 2001 and August 2002.

### **SUMMING UP THE IMPACT**

The analysis of trends in Shropshire show that:

- There were reductions in primary deliberate fires of 13% in the first year of the project. It is predicted that the project helped to prevent between 109 and 280 deliberate fires between September 2001 and August 2002.
- There were clear reductions in the levels of deliberate vehicle fires following intervention (of 3%). It is predicted that the project helped to prevent between 65 and 141 deliberate vehicle fires between Sept 2001 and August 2002.
- There were no primary deliberate school fires in year one of the project.
- The figures for farms and businesses show a decrease in deliberate primary fires in year one of the project.

## Impact Analysis 20: Shropshire Fire Investigation Training

### OUTCOME DATA USED

The main outcome data used for this project was all fires in Shropshire, all deliberate primary/secondary fires and all unknown primary/secondary fires.

### ANALYSIS OF IMPACT

The project was based upon providing fire investigation training to officers. The intended outcome from the project was to establish what the cause of fires were in a higher proportion of the recorded fires and thus, reduce the proportion of fires recorded as 'unknown'. The training began in April 2002 and finished in June 2002.

Figure C61 considers the number of deliberate fires and unknown fires as a proportion of all fires in Shropshire from April 2003. The dotted line denotes when the project began.

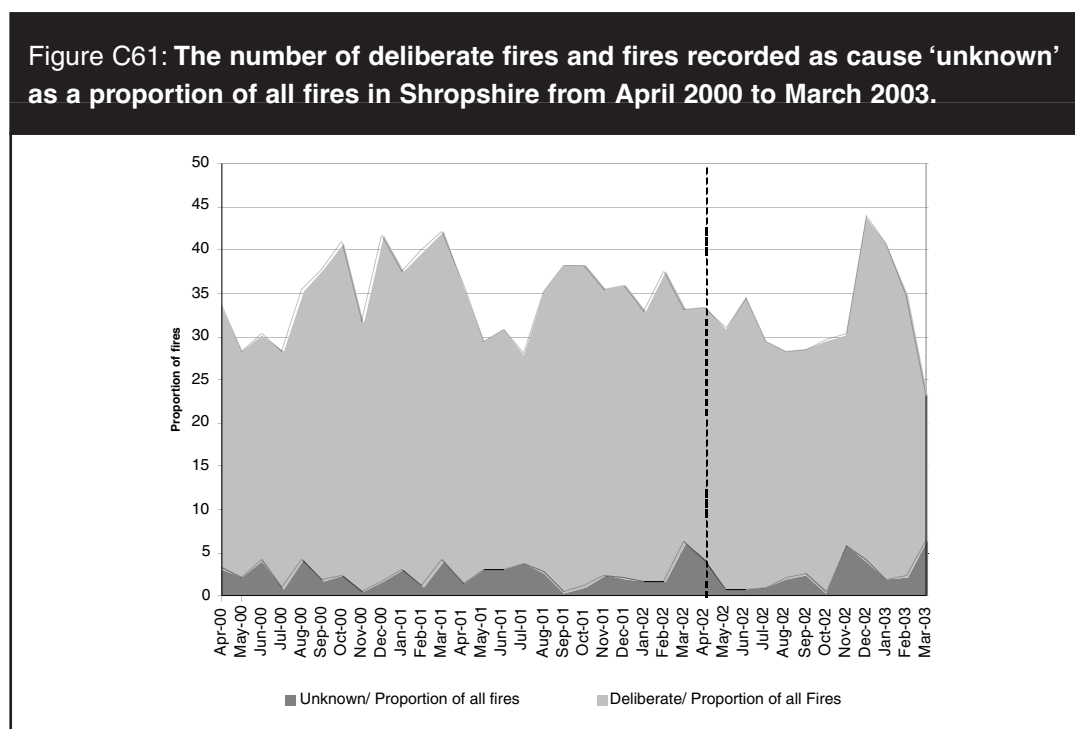


Figure C61 shows that the overall proportion of the total recorded fires in Shropshire that are recorded as 'deliberate' is between 28 and 43%. The proportion of fires where the cause is 'unknown' is much smaller at between 1 and 6%. It is generally observed however, that the trend for unknown fires appears to follow that for deliberate fires and after the commencement of fire investigation training there is little change to this pattern.

Table C103 considers the number of fires that were recorded as deliberate or unknown in Shropshire and the proportion of the overall total they constitute for the 12 months before the training began as against the 12 months after.

**Table C103: The total proportion of unknown and deliberate fires for the 12 months pre- training and the 12 months post-training.**

	<i>Pre-training Apr01-Mar 02</i>	<i>Post-Training Apr 02-Mar 03</i>
Deliberate fires (% of all)	31% (984)	28% (926)
Unknown fires (% of all)	2.7% (85)	2.8% (92)
All fires	100% (3,177)	100% (3,278)

The aim of the fire investigation training was to reduce the overall number of proportion of fires where the cause is unknown. However, in the year after the beginning of the training both the number of fires recorded as unknown and the overall proportion has increased (the total number from 85 to 92 and the proportion from 2.7% of all fires to 2.8%). In addition to this, it would also have been expected that the number of deliberate fires would have increased after the training. Both the number of deliberate fires and the overall proportion has in fact fallen (the number from 984 to 926 and the proportion from 31 to 28% of all fires).

**SUMMING UP THE IMPACT.**

Overall, it is observed that in the 12 months after the fire investigation training began that:

- There has been a slight increase in the number of fires where the cause is recorded as unknown. Here the opposite trend would have been expected.
- There was a slight decrease in the number of deliberate fires. Here, it might have been expected that a number of fires where the cause would formerly have been recorded as 'unknown' would now be recorded as deliberate. As such, a change in recording practices is not in evidence in the data presented above.

# Impact Analysis 21: South Tyneside Arson Task Force

## OUTCOME DATA USED

The outcome data used to assess the impact of the project consisted of raw data on the number of deliberate fires, refuse fires and vehicle fires in South Tyneside, between October 2000 and March 2003. This included data on the number of primary and secondary fires.

## ANALYSIS OF IMPACT

The South Tyneside project was based around the development of an arson task force that facilitated a variety of project activity. This activity was mainly based upon developing problem solving approaches to arson and was focused upon the reduction of vehicle fires and refuse fires. The analysis concentrates on deliberate primary vehicle fires and deliberate secondary refuse fires.

### *Deliberate primary vehicle fires*

One of the key interventions of the project related to vehicle fires. Here the focus of attention was across South Tyneside and within the area of Simonside. First, however, we consider the impact upon the wider South Tyneside area.

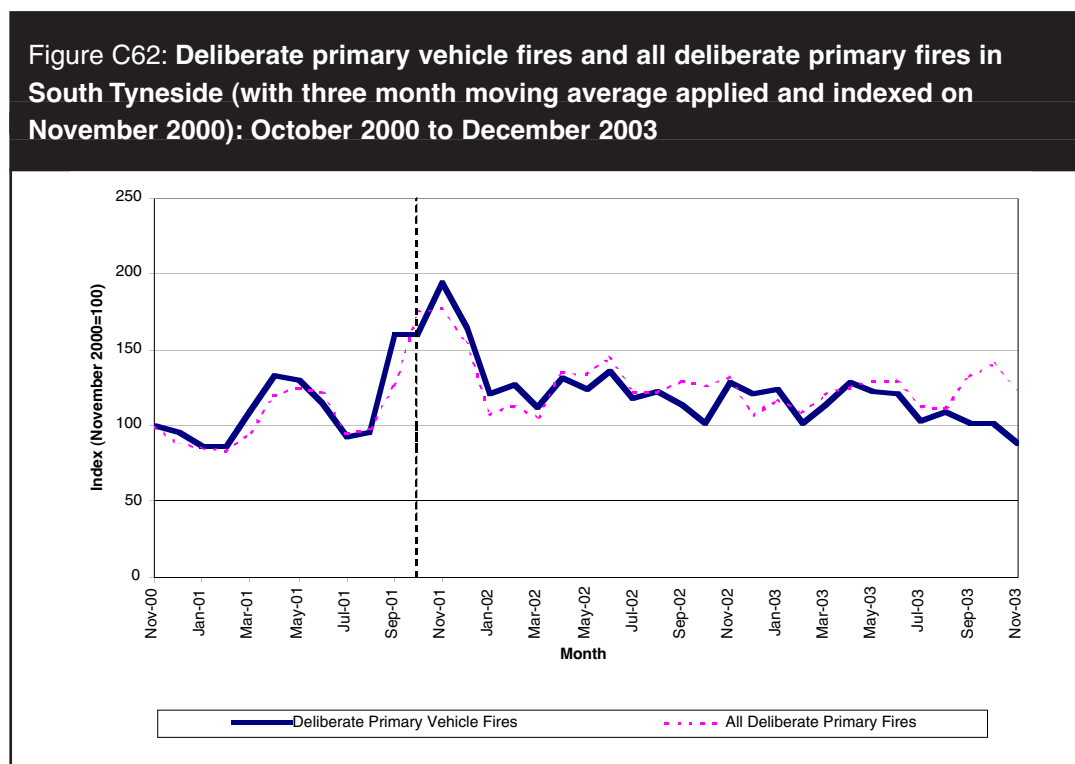
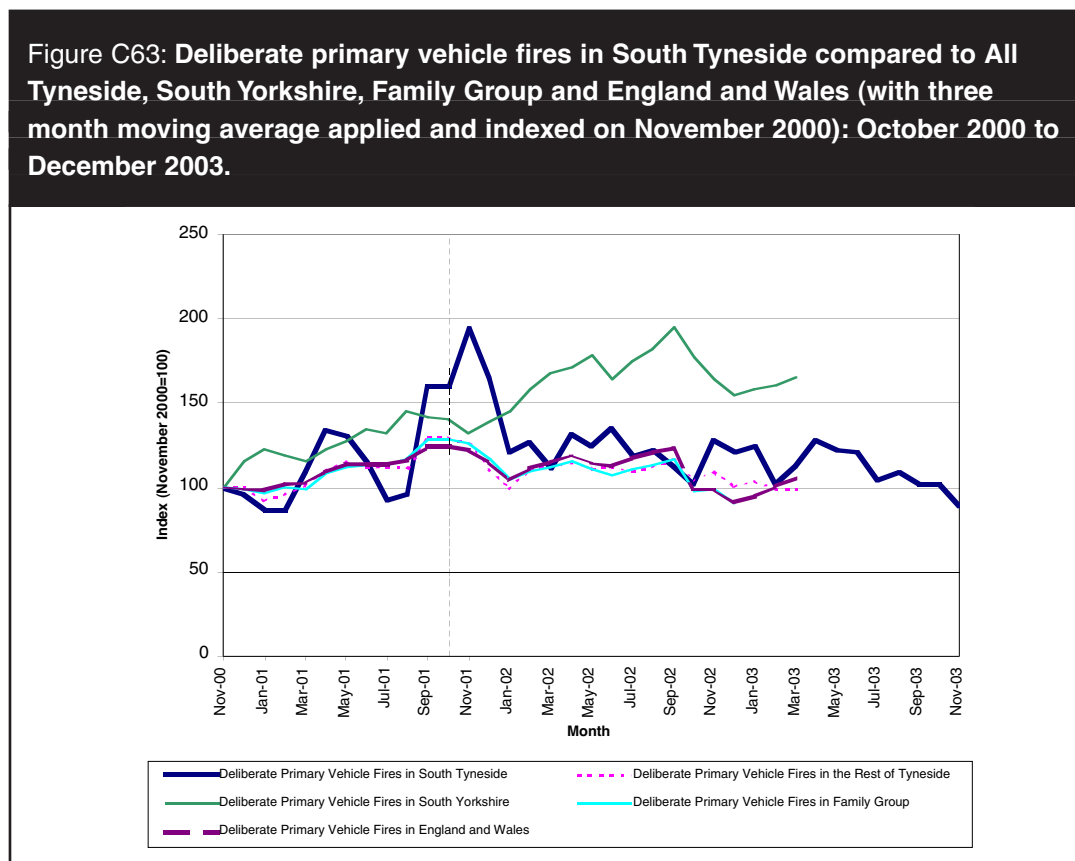


Figure C62 presents the trend in all deliberate primary fires in South Tyneside against all deliberate primary vehicle fires. This shows that the trend for deliberate primary vehicle fires broadly replicates that for all deliberate primary fires in South Tyneside. There is a general increase for both types to October 2001 and then a steady fall from the beginning of the project

Figure C63 presents a comparison of the trend in deliberate vehicle fires for South Tyneside, the rest of Tyneside, South Yorkshire, the family group and England and Wales. This shows that after October 2001 the general trend in South Tyneside and all the comparison groups (except South Yorkshire) appeared to be downwards. In South Yorkshire there was a steady increase in deliberate vehicle fires from the beginning of November 2000.



The *actual* number of vehicle fires is further explored for the pre-intervention and intervention year in Table C104. This shows that in the first year of implementation there was an increase in deliberate primary vehicle fires in South Tyneside of 37%. There were also increases in the comparison sites, the largest being in South Yorkshire (32%). It should be noted here the number of vehicle fires in the second year of the project fell by 18% to 248.

**Table C104: Number of deliberate primary vehicle fires in South Tyneside, the rest of Tyneside, South Yorkshire, Family area and England and Wales (October 2000 to September 2001 and October 2001 to September 02).**

	<i>Pre intervention</i> Oct 00 – Sep 01	<i>Post intervention</i> Oct 01 – Sep 02	<i>Percentage change</i>	<i>Significance</i>
South Tyneside	219	301	+37	ns
Rest of Tyneside	1,908	2,018	+6	ns
South Yorkshire	2,235	2,954	+32	**
Family Group	30,760	32,015	+7	ns
England & Wales	68,689	74,592	+9	*

\* statistically significant at 0.05 level, based on Mann Whitney U test  
 \*\* statistically significant at 0.01 level, based on Mann Whitney U test

An assessment of the impact of project in terms of deliberate primary vehicle fires is made below. Data are used from South Yorkshire for the highest impact estimate and from England and Wales for the lowest. The highest increase was actually in the project area, though if the project had not run and the trend in deliberate primary vehicle fires had been the same as England and Wales, there would have been a 7% increase in such fires and a total of 234 for the year (67 less than the actual number). If the trend had followed that for the South Yorkshire (+32%) there would have been 289 fires, which is still 12 less than the actual number.

**Table C105: Expected number of primary deliberate vehicle fires in South Tyneside (October 2001 to September 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	234	289
Actual level	301	301
<b>Difference</b>	<b>+67</b>	<b>+12</b>

### ***Deliberate primary vehicle fires in Simonside***

Though there appeared to be little impact in vehicle fires across South Tyneside in the first year of the project, there was a marked decrease in vehicle fires in the Simonside area, which was specifically targeted for intervention.

Table C106 outlines the number of vehicle fires in the Simonside area as compared to the rest of South Tyneside for the intervention implementation (April 2002- March 2003) period as against the same period for the previous year.

**Table C106: Number of deliberate vehicle fires in Simonside and the rest of South Tyneside (April 2001 to March 2002 compared to April 2002 to March 2003).**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Apr 01 – Mar 02	Apr 02 – Mar 03		
Simonside	43	20	-53%	*
Rest of South Tyneside	290	253	-13%	ns

\* statistically significant at 0.05 level, based on Mann Whitney U test

The table clearly indicates that carefully targeted intervention within a specific area had some impact upon deliberate primary vehicle fires. Over the impact period there was a reduction in such fires of 53% in Simonside. It should also be noted that vehicle fires over this period fell across the rest of South Tyneside by 13%.

Table C107 compares the reduction in deliberate primary vehicle fires in Simonside to the rest of South Tyneside, Tyneside, South Yorkshire, the family group and England and Wales. The rest of Tyneside, the family group and England and Wales have similar reductions in the post intervention year (7% for the rest of Tyneside and the family group and 6% for England and Wales). The largest fall is for Simonside at 53% (which is statistically significant), and the largest increase for South Yorkshire at 21% (also statistically significant).

**Table C107: Number of deliberate primary vehicle fires in Simonside, the rest of South Tyneside, the rest of Tyneside, South Yorkshire, Family Group and England and Wales pre / post intervention.**

	<i>Pre intervention</i> Apr 01 – Mar 02	<i>Post intervention</i> Apr 02 – Mar 03	<i>Percentage change</i>	<i>Significance</i>
Simonside	43	20	-53	*
Rest of South Tyne	290	253	-13	ns
Rest of Tyneside	2,048	1,919	-6	ns
South Yorkshire	2,562	3,110	+21	**
Family Group	33,316	30,909	-7	ns
England & Wales	73,695	69,224	-6	ns

\* statistically significant at 0.05 level, based on Mann Whitney U test  
 \*\* statistically significant at 0.01 level, based on Mann Whitney U test

**Table C108: Expected number of vehicle fires in Simonside (April 2002 to March 2003), the actual level and the difference between them.**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	40	51
Actual level	20	20
<b>Difference</b>	<b>-20</b>	<b>-31</b>

The lowest impact estimate is made by using data from the rest of Tyneside rather than South Tyneside (as intervention activity also took place in South Tyneside). The lowest impact estimate suggests there might have been a reduction in vehicle fires of 6% without intervention (giving 40 fires between April 2002 to March 2003). The highest impact estimate suggests there might have been an increase of 21% without intervention (giving 51 fires). The actual number of fires was 20, thus suggesting that intervention prevented between 20 and 31 deliberate vehicle fires between April 2002 and March 2003.

***Deliberate secondary refuse fires***

The project also focused upon refuse fires across the South Tyneside area. Interventions focused upon refuse removal, though there were also specific campaigns at peak times for refuse fires such as in October and November around bonfire night. Figure C64 shows the trends in deliberate secondary refuse fires, all deliberate secondary fires and all deliberate fires in the South Tyne area.



**Figure C64: Deliberate secondary refuse fires, all deliberate secondary fires and all deliberate fires in South Tyneside (with three month moving average applied and indexed on November 2000): October 2000 to December 2003**

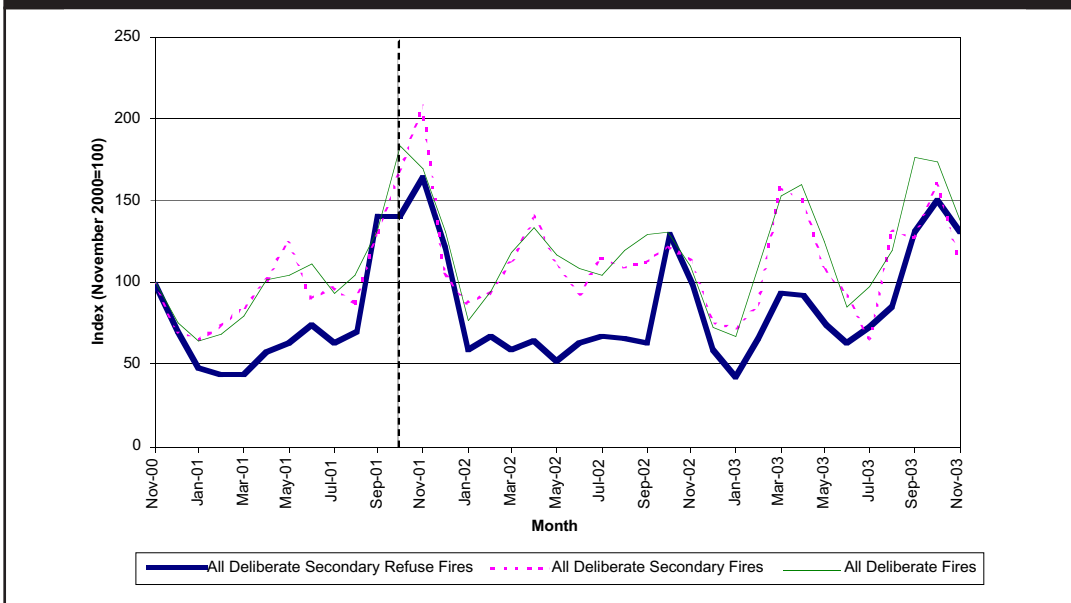


Figure C64 shows that the number of all deliberate fires, deliberate secondary fires and deliberate secondary refuse fires peaked in October 2001 and then steady fell to January 2002. There was then a steady rise in deliberate secondary refuse fires from January 2003.

Figure C65 compares the patterns of deliberate secondary refuse fires in South Tyneside against the rest of Tyne and Wear and South Yorkshire.

**Figure C65: Deliberate secondary refuse fires in South Tyne, the rest of Tyne and Wear and South Yorkshire (with three month average applied and indexed on November 2000): October 2000 - December 2003**

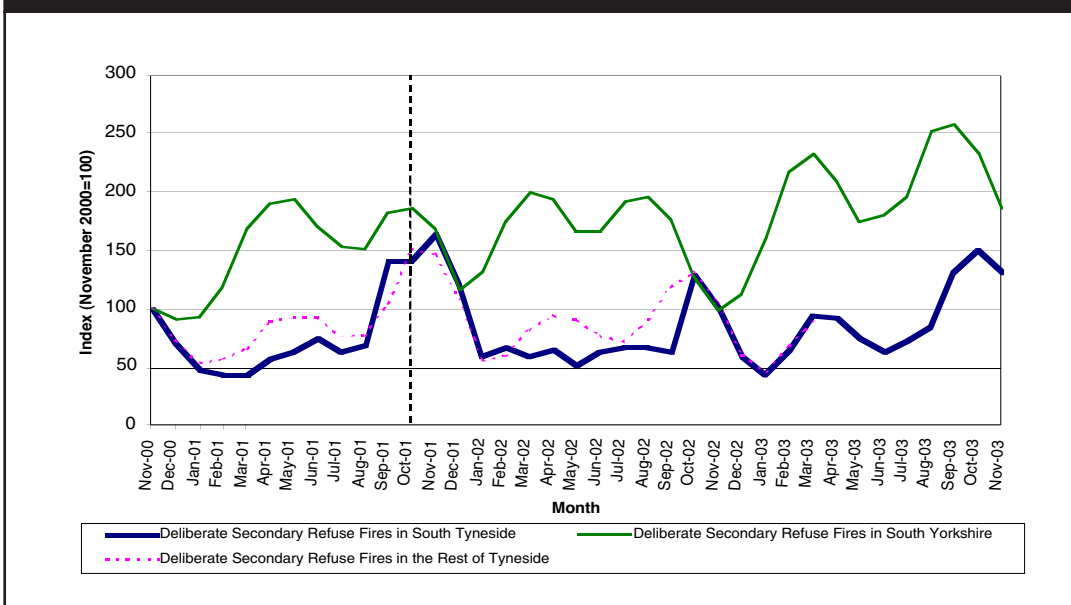


Figure C65 shows that for all of the comparison there appears to be remarkably similar trend from November 2000. For all groups there appears to be a peak in secondary refuse fires each year in both March/April and again in November. The highest number of fires in South Tyneside has consistently been in the October to November period of the year.

Table C109 explores the trend outlined above by considering the actual number of refuse fires for the comparison groups for the pre-intervention year as against the first intervention year. This shows that there were increases in the number of refuse fires in all areas. The highest increase was in South Tyneside (26%) and the lowest in all Tyne and Wear (19%). This tells us that the intervention had no impact in the first year across South Tyneside. It is, however, observed that in the second year of the intervention (from October 2002 to September) the number of refuse fires in South Tyneside fell by 7% to 920.

<b>Table C109: Number of deliberate secondary refuse fires in South Tyneside, the rest of Tyneside and South Yorkshire pre / post intervention</b>					
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>	
	Oct 00-Sep 01	Oct 01- Sep 02			
South Tyneside	782	988	+26	ns	
Rest of Tyneside	6,662	7,909	+19	ns	
South Yorkshire	3,785	4,744	+25	ns	

The impact analysis below shows that if the number of deliberate secondary refuse fires had followed the same trend as for the rest of Tyneside, there would have been 58 fewer fires between October 2001 and September 2002. If the patterns had followed that of South Yorkshire there would have been 12 fewer fires.

<b>Table C110: Expected number of deliberate secondary refuse fires in South Tyneside (October 2001 to September 2002), the actual level and the difference between them.</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	930	976
Actual level	988	988
<b>Difference</b>	<b>+58</b>	<b>+12</b>

Specific attention was made to the reduction of refuse fires during the peak times of year in October and November of 2002 and 2003. Table C111 presents the data for all refuse fires compared to all deliberate fires for the two months when the operations ran - namely October and November 2002 and 2003 as against the same period for 2001. Here the data shows that during the intervention period the number of refuse fires fell by 40% in the first year, though all deliberate fires also fell by 39%. In the second year of the operation the number of refuse fires increased by 39% and there was also an increase in deliberate fires by 37%. This suggests that the fall in the first year of the operation might be attributed to a general trend in the area.

**Table E45: All deliberate secondary refuse fires compared to all deliberate fires October to November 2001 and October to November 2002.**

	<i>All Deliberate Secondary Refuse Fires</i>		<i>All Deliberate Fires</i>	
	<i>Number</i>	<i>Percentage Change</i>	<i>Number</i>	<i>Percentage Change</i>
Oct-Nov 2001	411		598	
Oct- Nov 2002	244	-40	366	-39
Oct- Nov 2003	339	+39	501	+37

### ***Deliberate primary fires***

The overall impact of the project on deliberate primary fires is considered below. Table C112 presents data for primary deliberate fires for the project areas against the comparison areas of the rest of Tyneside, South Yorkshire, the Family Group and England and Wales for the pre-project year against the first year of the project.

**Table C112: Number of deliberate primary fires of all kinds in South Tyneside, Tyneside, South Yorkshire, Family Group and England and Wales.**

	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	<i>Oct 00-Sep 01</i>	<i>Oct 01- Sep 02</i>		
South Tyneside	373	503	+35	**
Rest of Brigade	3,232	3,326	+3	ns
South Yorkshire	3,128	3,920	+25	**
Family Group	46,546	48,757	+4.7	ns
England & Wales	107,463	111,285	+3.5	ns

This shows that there were rises in all areas with the highest in South Tyne at 35% (which is statistically significant) and South Yorkshire (which is also statistically significant). The overall impact is given in Table C113 below. This shows that if South Tyneside had followed the pattern for all of the brigade (a 3% increase) there would have been 384 deliberate primary fires between October 2001 and November 2002 rather than 503 (119 less). If the trend had followed that for South Yorkshire (where there was a 25% rise) there would have been 37 fewer deliberate primary fires.

**Table C113: Expected number of deliberate primary fires in South Tyneside (October 2001 – November 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	384	466
Actual level	503	503
<b>Difference</b>	<b>+119</b>	<b>+37</b>

## **SUMMING UP THE IMPACT**

There appears to be a mixed message from the South Tyneside project. Where interventions targeted small geographical areas there appears to have been more

impact than when interventions were employed across the wider South Tyneside area. In summary:

- During the first year of the project there were sharp rises in the numbers of vehicle fires across South Tyneside (by 37%), though a reduction in the second year (by 18%).
- More encouraging news is observed by considering the reduction of deliberate primary vehicle fires in Simonside. While the fall might be partly attributed to wider trends, the decrease of 53% suggests that project intervention has had some impact here.
- There was an increase in deliberate secondary refuse fires of 26% in the first year of the project, though a fall of 7% in the second year.
- During the first year of the bonfire initiative there was a 40% reduction in fires in October and November of 2002, though a 39% increase in the following year.

## Impact Analysis 22: South Wales – Merthyr Tydfil Vehicle Arson Reduction Initiative (VARI)

### OUTCOME DATA USED

This analysis is based on monthly data for deliberate primary vehicle fires, total deliberate primary fires and total fires for Merthyr Tydfil and for South Wales Fire Brigade as a whole. Comparisons were also made with Barrow-in-Furness as somewhere deemed similar, as well as with the Brigade family group and with England and Wales.

### ANALYSIS OF IMPACT

The analysis here concentrates on deliberate primary vehicle fires and all primary fires as these reflect the kind of fires addressed by the Vehicle Arson Reduction Initiative.

#### *Deliberate primary vehicle fires*

Figure C66 shows that deliberate primary vehicle fires remained relatively level following the introduction of the project, while all fires showed much larger seasonal fluctuations.

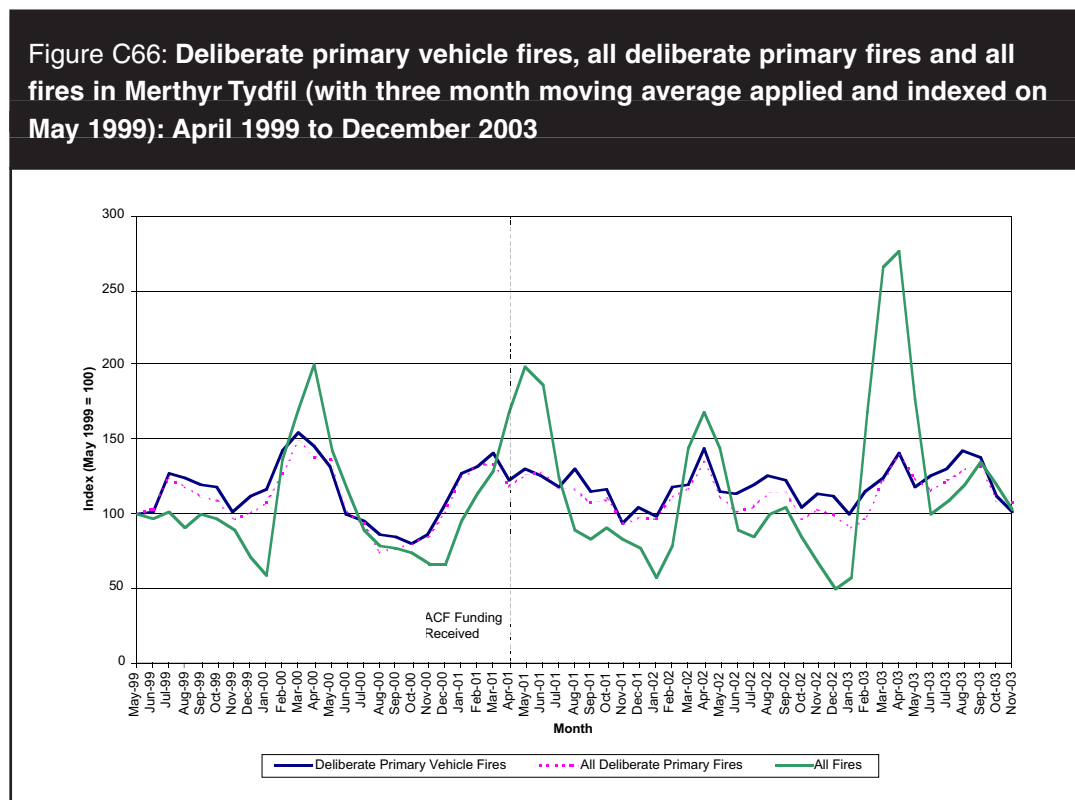


Figure C67 shows the trend in deliberate vehicle fires in Merthyr Tydfil compared to the rest of South Wales, Barrow in Furness, the Family Group and England and Wales. Compared to most, the trend in Merthyr Tydfil was lower than elsewhere, apart from Barrow, which saw a sharper reduction, although based on much smaller numbers in the first instance.

**Figure C67: Deliberate primary vehicle fires in Merthyr Tydfil, Barrow-in-Furness, Rest of South Wales, Family Group and England and Wales (with three month moving average applied and indexed on May 2000): April 2000 to December 2003**

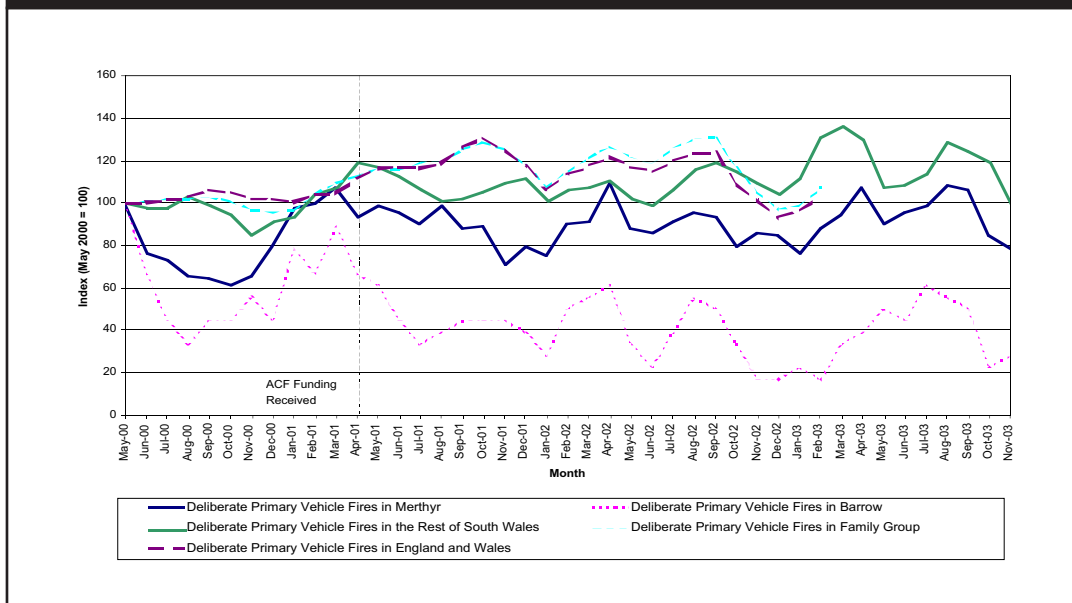


Table C114 shows that, following the start of the project, deliberate primary vehicle fires rose by eight percent in Merthyr, although this was less than the increase in the rest of South Wales, the Family Group and England and Wales.

**Table C114: Number of deliberate primary vehicle fires in Merthyr Tydfil, Barrow-in-Furness, Rest of South Wales, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> April 00 - Mar 01	<i>Post intervention</i> Apr 01 - Mar 02	<i>Percentage change</i>	<i>Significance</i>
Merthyr Tydfil	238	258	+8	ns
Barrow-in-Furness	46	35	-24	ns
Rest of South Wales	2,313	2,556	+11	*
Family Group	19,668	23,261	+18	**
England & Wales	63,679	73,695	+16	**

\* statistically significant at the 0.05 level, based on Mann Whitney U test.  
 \*\* statistically significant at the 0.01 level, based on Mann Whitney U test.

Where the impact on deliberate vehicle fires is concerned, Table C115 estimates that there was somewhere between an additional 77 fires and 23 fewer fires.

**Table C115: Expected number of deliberate primary vehicle fires in Merthyr Tydfil (April 2001 to March 2002), the actual level and the difference between them**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	181	281
Actual level	258	258
<b>Difference</b>	<b>+77</b>	<b>-23</b>

### *Deliberate primary fires*

Overall, deliberate primary fires in Merthyr increased by five percent (not statistically significant), which was lower than in any of the comparison areas.

<b>Table C116: Number of deliberate primary fires in Merthyr Tydfil, Barrow-in-Furness, Rest of South Wales, Family Group and England and Wales pre / post intervention</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	April 00-Mar 01	Apr 01-Mar 02		
Merthyr Tydfil	307	322	+5	ns
Barrow-in-Furness	87	95	+9	ns
Rest of South Wales	3,352	3,754	+12	*
Family Group	29,945	35,148	+17	**
England & Wales	97,332	111,788	+15	**
* statistically significant at the 0.05 level, based on Mann Whitney U test.				
** statistically significant at the 0.01 level, based on Mann Whitney U test.				

Table C117 shows that the overall impact on deliberate primary fires was estimated to have been between 13 and 37 fewer fires in the year following intervention.

<b>Table C117: Expected number of deliberate primary fires in Merthyr Tydfil (April 2001 to March 2002), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	335	359
Actual level	322	322
<b>Difference</b>	<b>-13</b>	<b>-37</b>

## **SUMMING UP THE IMPACT**

Merthyr Tydfil Vehicle Arson Reduction Initiative was associated with the following impacts:

- Deliberate vehicle fires increased by eight percent, but this was lower than the increase in the rest of South Wales, the Family Group or England and Wales.
- Deliberate vehicle fires were estimated to have been between 77 incidents higher and 23 lower than expected in the year following intervention.
- Deliberate primary fires overall increased by 5%. This increase was lower than in any of the four comparisons.
- There were estimated to have been between 13 and 37 fewer deliberate primary fires in the year following intervention.

# Impact Analysis 23: West Sussex Youth Co-ordinator

## OUTCOME DATA USED

The outcome data used in this report consisted of all fires, all deliberate fires and deliberate secondary fires. Deliberate secondary fires were also broken down by whether there was evidence that children had been involved. This was relevant for the West Sussex analysis as it involved youth interventions. Data at the brigade level was examined and was broken down by month. Comparison data for Suffolk on secondary fires and for Suffolk, England and Wales and the Family Group for primary fires were used.

## ANALYSIS OF IMPACT

The analysis here concentrates on deliberate secondary fires, and those deliberate secondary fires thought to have been started by children and all primary fires as these reflect the kind of fires addressed by the co-ordinator.

### *Deliberate secondary fires*

Figure C68 shows the trend in deliberate secondary fires that were thought to involve children, compared to all deliberate secondary fires and all fires. This shows that the trend was more volatile for those involving children, although this was due to the smaller numbers on a monthly basis. It is also important to note that it is unclear how robust these figures are as they rely on a judgement of fire officers to determine the involvement of children.

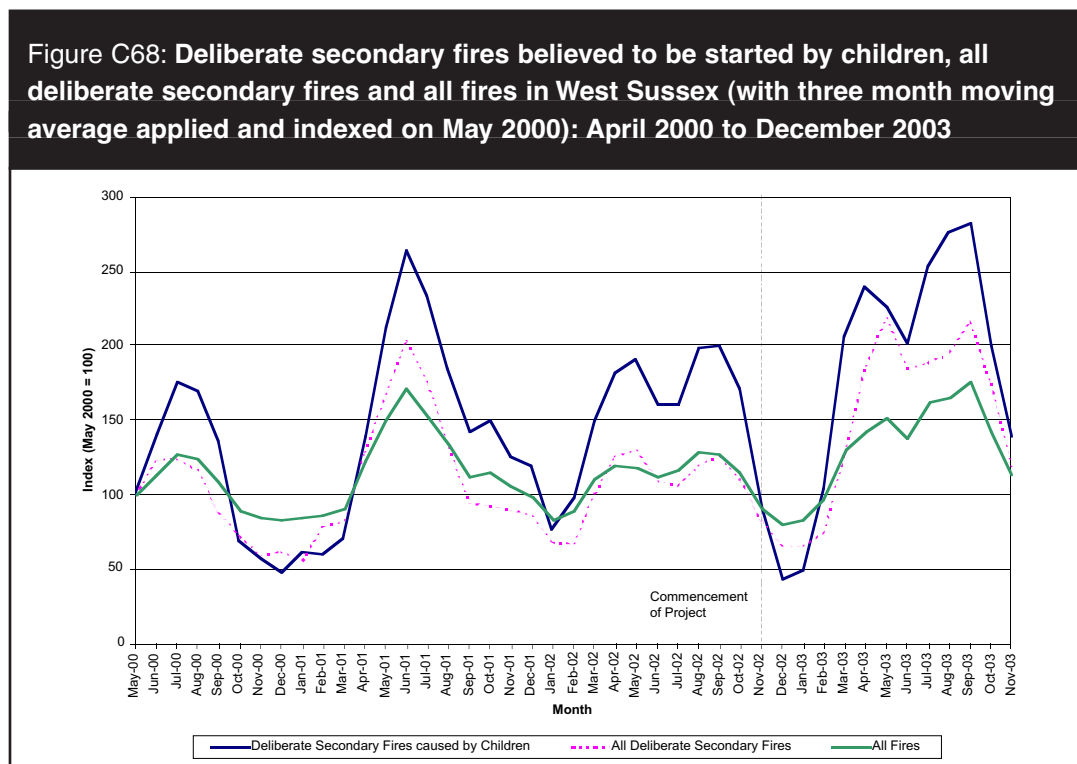


Table C118 shows that deliberate secondary fires thought to involve children increased by 17% in the year following intervention. This would appear to be a non-standard



reporting code, which is not collected elsewhere. This means that no comparison areas could be used to determine what would have happened, had there been no intervention. However, data were available for deliberate secondary fires in general, as shown in Figure C69.

**Table C118: Number of deliberate secondary fires believed to have been started by children in West Sussex pre / post intervention**

	<i>Pre intervention</i> Nov 01 – Oct 02	<i>Post intervention</i> Nov 02 – Oct 03	<i>Percentage change</i>	<i>Significance</i>
West Sussex	459	535	+17	ns

Figure C69 shows that the trend in deliberate secondary fires in West Sussex was similar to the trend observed in Suffolk, with an upward trend following the commencement of the project.

**Figure C69: Deliberate secondary fires in West Sussex and Suffolk (with three month moving average applied and indexed on May 2001): April 2001 to December 2003**

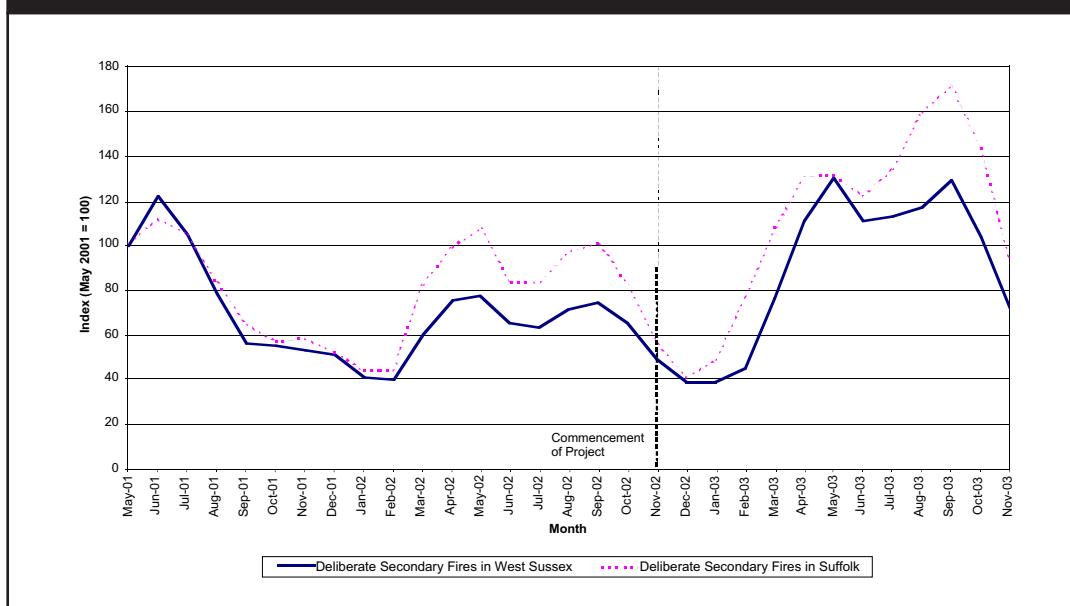


Table C119 shows that in the year following the start of the intervention, West Sussex witnessed a 41% increase in deliberate secondary fires. This increase was slightly higher than that observed in Suffolk.

**Table C119: Number of deliberate secondary fires in West Sussex and pre / post intervention**

	<i>Pre intervention</i> Nov 01 – Oct 02	<i>Post intervention</i> Nov 02 – Oct 03	<i>Percentage change</i>	<i>Significance</i>
West Sussex	649	914	+41	ns
Suffolk	812	1,126	+39	ns

Table C120 shows that there were an additional 12 deliberate secondary fires above the expected level in comparison to the level in Suffolk.

<b>Table C120: Expected number of deliberate secondary fires in West Sussex (November 2002 to October 2003), the actual level and the difference between them</b>	
	<i>Impact estimate</i>
Expected level	902
Actual level	914
<b>Difference</b>	<b>+12</b>

### ***Deliberate primary fires***

Table C121 shows the trend in deliberate primary fires in West Sussex compared to Suffolk, the family Group and England and Wales. This shows that, while West Sussex achieved a reduction in deliberate primary fires, the reductions were larger in the three comparison areas examined.

<b>Table C121: Number of deliberate primary fires in West Sussex, Suffolk, Family Group and England and Wales pre / post intervention</b>				
	<i>Pre intervention</i>	<i>Post intervention</i>	<i>Percentage change</i>	<i>Significance</i>
	Nov 01-Mar 02	Nov 02-Mar 03		
West Sussex	337	323	-4	ns
Suffolk	182	124	-32	*
Family Group	5,736	4,814	-16	ns
England & Wales	44,568	37,387	-16	ns

\* statistically significant to the 0.05 level, based on the Mann Whitney U test.

Table C122 suggests that, following the introduction of the intervention, there were between 40 and 94 additional deliberate primary fires in West Sussex.

<b>Table C122: Expected number of deliberate primary fires in West Sussex (November 2002 to March 2003), the actual level and the difference between them</b>		
	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	229	283
Actual level	323	323
<b>Difference</b>	<b>+94</b>	<b>+40</b>

## **SUMMING UP THE IMPACT**

Following the introduction of the West Sussex Youth Co-ordinator:

- Deliberate secondary fires thought to involve children increased by 17%.
- Deliberate secondary fires of all kinds rose by 41% in West Sussex.

- Compared to Suffolk, there were estimated to have been an additional 12 deliberate secondary fires.
- Deliberate primary fires declined by 4% in the year following intervention in West Sussex, although reductions were larger in each of the three comparison areas examined.
- There were estimate to have been between 40 and 94 additional primary deliberate fires above the level expected in the year following intervention.

# Impact Analysis 24: West Yorkshire – Joint fire and police school arson reduction initiative / Schools arson audits

## OUTCOME DATA USED

The outcome data used were deliberate primary school fires and secondary school fires, though comparisons are made with all deliberate fires and all fires for the brigade.

## ANALYSIS OF IMPACT

The project had the key aim of reducing fires in and around schools. The major aim of the project was a reduction in deliberate fires, though as advice was also given on all aspects of fire safety, it is also expected that there would be a reduction in school fires overall. Therefore, primary and secondary school fires were examined and comparisons made with all deliberate fires and all fires for the brigade, a comparison area, the brigade family group and with England and Wales.

### *Deliberate primary fires and deliberate secondary fires in Schools*

Figure C70 presents data for all deliberate primary school fires in West Yorkshire, all deliberate primary fires and all fires in West Yorkshire from September 2000 to November 2003. The dotted line denotes the month when the project began.

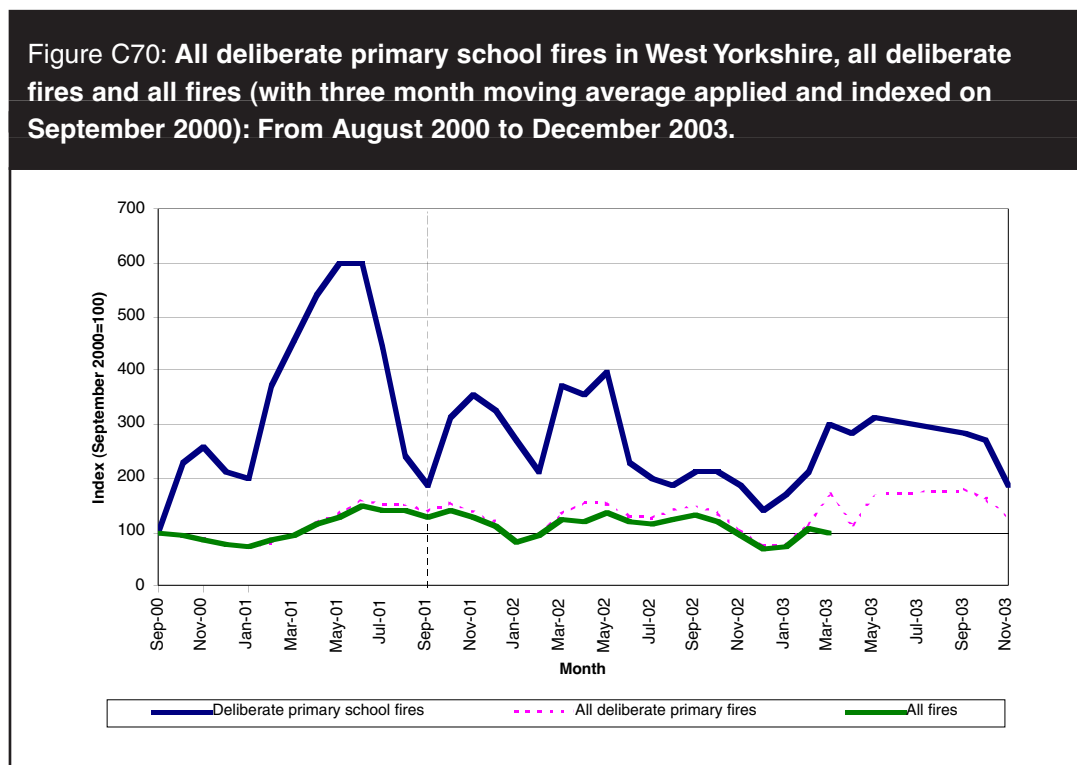


Figure C70 shows that the trend for primary deliberate fires broadly replicates that of all fires. However, the trend for primary deliberate school fires increased from September

2000 to May 2001 and then falls to the start of the project. After this period the number of primary deliberate school fires is more consistent.

One of the main aims of the project was to conduct audits in schools that were victims of arson either within or outside of school buildings. The audits made recommendations on arson prevention both within the school and in the immediate vicinity.

Figure C71 presents the overall trend for all fires, all primary fires and all secondary fires<sup>52</sup> within school buildings and around the school.

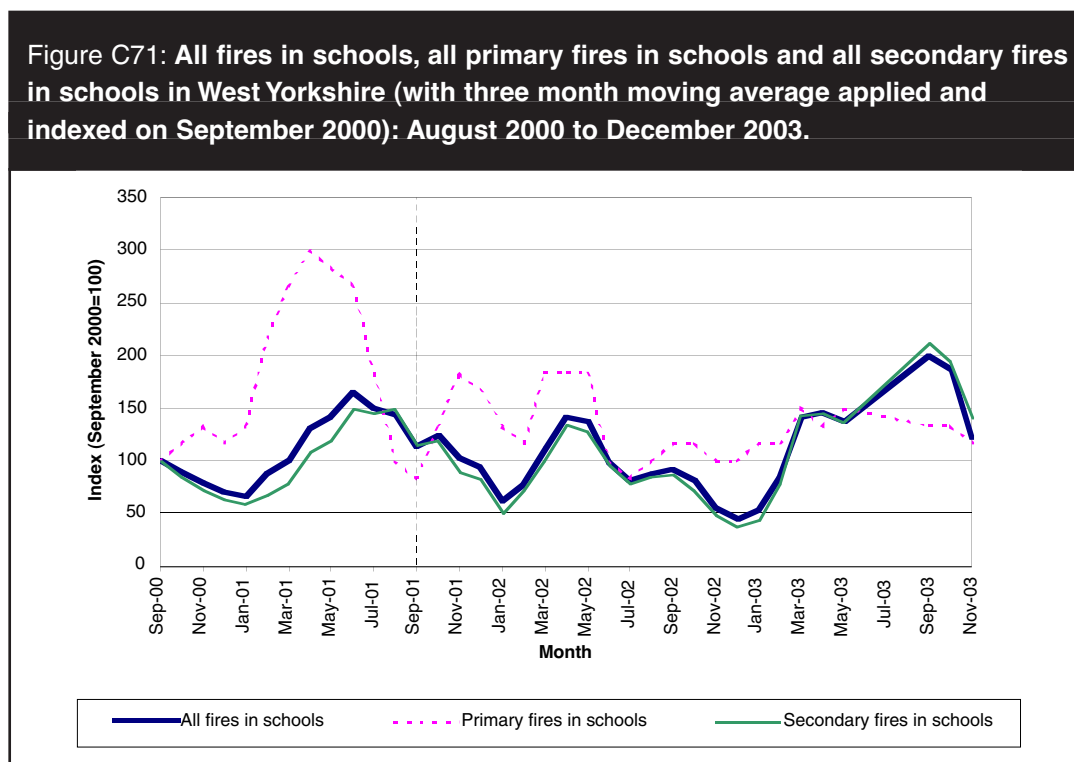


Figure C71 highlights that the general trend for secondary fires in schools replicates the pattern observed for all school fires. However, there are rapid falls in the number of all primary schools fires over the two years of the project. Again, the slight concern here is the rise in all school fires/ secondary deliberate school fires observed after September 2003.

The overall fall in primary fires in schools during the two years of the project is observed in Table C123. This shows that the number of primary fires within school buildings fell by 21.5% in the first year of the project (though not statistically significant) and by 17% in the second year (there was an overall decrease of 35% between the pre-implementation year and the second year of the project). For school fires outside buildings (secondary fires) the impact is less marked at with a 3% decrease in year one and an increase of 1.5% in year two (giving an overall decrease of 1.3%).

<sup>52</sup> These all include both deliberate and accidental fires.

**Table C123: All fires inside school buildings (primary) and all fires outside the school buildings (secondary) compared and percentage change on previous year**

	<i>School fires inside buildings</i>		<i>School fires outside buildings</i>	
	<i>Number</i>	<i>Percentage Change</i>	<i>Number</i>	<i>Percentage Change</i>
Pre-project year	130		470	
Sep 2001- Aug 2002	102	-22 <sup>53</sup>	456	-3 <sup>54</sup>
Sep 2002- Aug 2003	85	-17	464	+1.5

The evidence suggests that the project might have had some impact on the reduction of school fires (particularly primary fires).

Figure C72 presents data for deliberate primary school fires in West Yorkshire, the comparison area of South Yorkshire, the Family Group and England and Wales.

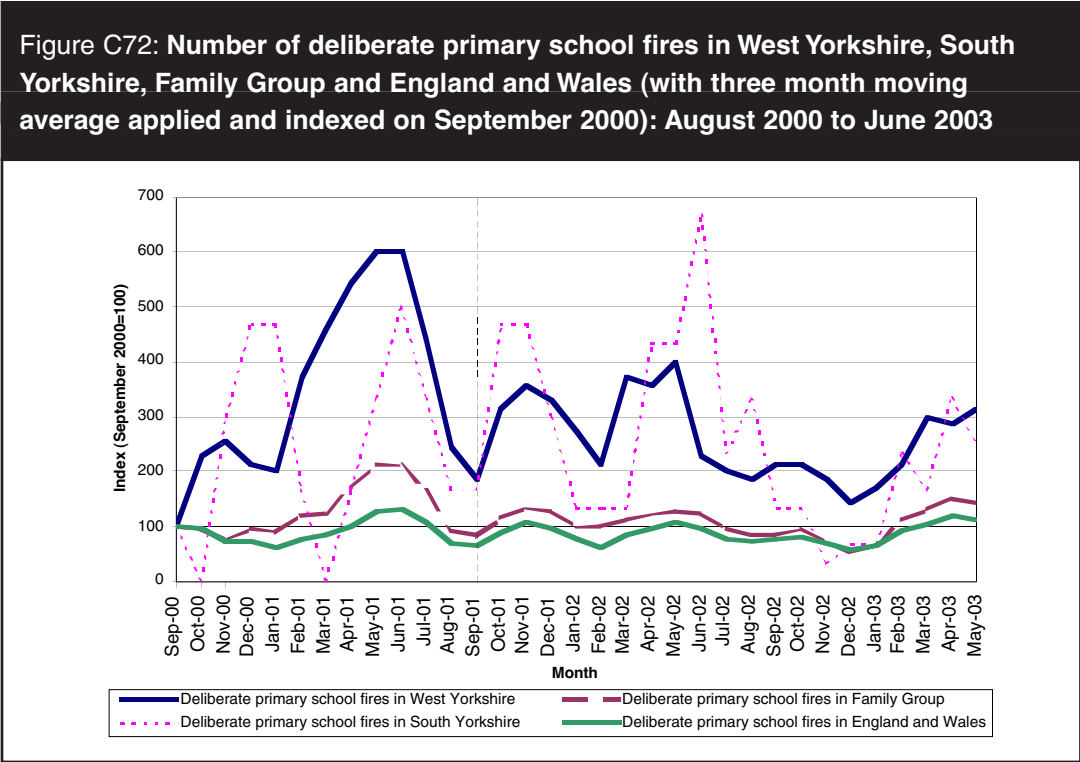


Figure C72 shows that the number of primary deliberate school fires starts to fall in West Yorkshire after May 01. The pattern for South Yorkshire is haphazard (mainly due to the low number of primary deliberate school fires). The patterns for the family groups and England and Wales are more consistent, though here we also see a slight peak in May 2001 which then falls to September 2001.

Table C124 begins to explore the potential impact of project intervention on deliberate primary fires in schools by comparing the number of fires in West Yorkshire to a comparison area (South Yorkshire), the brigade family group and for England and Wales. The data are presented for the 12 months pre-intervention as against the first 12 months of intervention (national data are only available to March 2003 at present, therefore comparison could not be made to August 2003).

<sup>53</sup> Mann-Whitney U=56.5, p=0.368

<sup>54</sup> Mann-Whitney U=70, p=0.908

**Table C124: Number of deliberate primary school fires in West Yorkshire, South Yorkshire, Family Group and England and Wales pre / post intervention**

	<i>Pre intervention</i> Sep 00- Aug 01	<i>Post intervention</i> Sep 01- Aug 02	<i>Percentage change</i>	<i>Significance</i>
West Yorkshire	75	60	-20	ns
South Yorkshire	29	38	+31	ns
Family Group	407	336	17	ns
England and Wales	853	796	-7	ns

The table shows that the biggest decrease in school fires is in the West Yorkshire project impact area (though not statistically significant). Here there is a decrease of 20% over the first year of the project. The comparison area (South Yorkshire) has a lower number of deliberate school fires, though has the biggest increase of all the groups in the table increasing by 31%.

According to the data in Table C124 we can assess the expected level of deliberate school fires based on the lowest estimate of impact (comparison to South Yorkshire) and the highest estimate of impact (which is the family group at -17%). This is presented in Table C125.

**Table C125: Expected number of deliberate primary school fires in West Yorkshire (Sept 2001 to Aug 2002 and the difference between them.**

	<i>Lowest impact estimate</i>	<i>Highest impact estimate</i>
Expected level	62	98
Actual level	60	60
<b>Difference</b>	<b>-2</b>	<b>-38</b>

Assuming that the West Yorkshire area followed the general trend for the South Yorkshire area over the 12-month impact period, it would have been expected that there would have been 98 deliberate primary school fires. If it had followed the trend for England and Wales the number would have been 62. As the actual number of fires was 60, we can therefore conclude that the project resulted in between 2 and 38 fewer deliberate school fires in West Yorkshire between September 2001 and August 2002.

## SUMMING UP THE IMPACT

Though there has been a slight increase in school fires outside of buildings in year two of the project, overall the data is still encouraging. In summary:

- In year two of the project this decrease slowed slightly to 2% (though there were continued increases in deliberate fires and all fires).
- In year one of the project primary deliberate school fires fell by 21.5% and 17% in year two (there was a decrease in secondary deliberate school fires by 3% in year one and an increase of 1.5% in year two).
- All deliberate school fires fell by 20% in the first year of the project. It is estimated that the project resulted in between 2 and 38 fewer primary deliberate school fires over this period.

# ANNEX D

## Cost Analysis for Case Study Sites

This section provides further information on the costs of the case study schemes. In particular, costs are compared with activity within the broad intervention headings described in Section 5. Table D1 summarises the costs associated with each broad category of intervention.

<b>Table D1: Estimated costs by intervention type</b>							
<i>Scheme / intervention</i>	<i>Capacity building</i>	<i>Removal of fuel</i>	<i>Awareness raising</i>	<i>Diversion</i>	<i>Reducing proclivity to offend</i>	<i>Detection</i>	<i>Situational prevention</i>
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Avon	8.9	60.3	30.9	0.0	0.0	0.0	0.0
Cumbria	0.0	0.0	100	0.0	0.0	0.0	0.0
Luton	14.3	77.7	2.5	4.9	0.5	0.0	0.0
Merseyside	0	0	100	0.0	0.0	0.0	0.0
Northumberland	49.0	22.2	28.9	0.0	0.0	0.0	0.0
Shropshire	0.0	0.0	0.0	0.0	0.0	100	0.0
South Tyneside	54.4	24.6	2.8	0.0	0.2	17.9	0.0
Swansea	50.3	1.9	13.6	0.0	3.3	1.3	29.6
West Sussex	57.7	0.0	24.4	0.0	18.0	0.0	0.0
West Yorkshire	0.0	0.0	100.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>21.6</b>	<b>48.5</b>	<b>21.3</b>	<b>2.0</b>	<b>1.2</b>	<b>2.9</b>	<b>2.6</b>
* percentages may not sum to 100% due to rounding							

### ARSON AUDIT INITIATIVES

Although ‘awareness raising’ was a feature of a number of the case study schemes, this type of intervention was the focus of only three: those delivered in Cumbria, West Yorkshire and Merseyside. The main approach of these schemes was on the completion of arson ‘audits.’ While the scheme implemented in West Yorkshire concentrated on schools and the surrounding neighbourhood, the scheme in Cumbria sought to raise awareness within local businesses, councils and community groups. In the case of Merseyside the focus was firmly upon community groups with arson audits completed within private homes. All three initiatives included elements of capacity building, such as closer working with police; and improved investigation, mapping and data evaluation/analysis and so on.



## ***Cumbria***

In Cumbria, two officers were employed to conduct the arson audits. Both received 12 month contracts at a combined cost of just over £43,200 including on-costs (NI, superannuation, car user allowance and uniforms) at around 17%. Initial training, was provided by an ADO at Fire Service premises with additional training accessed by joining an existing police recruits course.<sup>55</sup> The cash outlay for training activities related to subsistence (£83). However, additional costs were included for the internal trainer's time and use of premises even though these resources were provided 'freely'. Total cost of training was therefore estimated as being £938.

In addition to training-related activities, additional set-up costs included 11 hours of Personnel Officer time for writing job descriptions, advertising posts, processing applications, short-listing candidates and interviews. A shadow cost of £200 to cover advertising was also included.

It is debatable as to whether the writing of the project bid is a replicable cost, since it represents a one-off activity in the context of sustainable project over many years. The view here however, is that such an activity may be replicable if it is used as a formal plan/ approach for delivery. As such 16 hours of Senior Divisional Officer time were included.

Additional costs for this year-long scheme included travel (£7000) and equipment and premises (£1,356).<sup>56</sup>

The arson auditors received ongoing central support through:-

- An Administrator and Secretary (both at administration scale 2 for a combined total of 624 hours) at £4,742
- A Senior Divisional Officer (ongoing liaison/information exchange, quarterly review meetings including production of report for a total of 25 hours input) at £704
- Arson Action Team contribution of £250
- Access to relevant premises (shadow cost of £747 based on 2.5% of personnel costs) and office supplies (telephone, stationary and so on) at £3,222.

Overall ongoing costs for the year were estimated to be £42,190 or £56 per Type A audit completed. Analysis of the cost burden reveals that £8.22 per audit was provided in-kind by the police and fire service.

The main identifiable external cost impact from the project were the actual changes made to (private) premises based upon recommendations made in the arson audits. No costing information was available on the changes made, however. Evaluators were able to identify a list of the types recommendations typically made. These included, for example, the need to improve fencing; install CCTV systems, door locks and smoke alarms and so on. As such, the costing impact is likely to vary significantly according to the recommendations made.

<sup>55</sup> In the latter case, the auditors joined an existing police recruit's course.

<sup>56</sup> Equipment included tools and smoke alarms, arson alert devices etc. A shadow cost for premises was included at 2.5% of all staff costs.

### ***West Yorkshire***

Similarly, for West Yorkshire, the main cost drivers were the employment of the Arson Reduction Officer and Crime Reduction Officer. Both were paid an annual salary of £21,284 (plus an estimated 17% on-costs) reflecting their greater experience relative to the similar posts in Cumbria. Other relevant costs included:-

- Set-up period costs (writing project bid, job descriptions, job adverts, processing applications and job interview-related costs, initial training) at £5,153
- IT purchases (computer, digital camera) at £760 (annuitised cost with £2,500 apportioned for premises/office)
- Travel costs at £1674
- Telephone and office related costs at £1960
- £860 in training fees

Ongoing costs were valued overall at £53,682 per annum. 196 schools were audited (visited, report written, follow-up) during the implementation period. This gives an overall cost per audit of £684 from direct activity (with £484 of this cost being met by ACF funding). In comparison with the audit activity undertaken in Cumbria this figure does appear high. The clear suggestion, of course, is that school audits are more resource intensive than audits conducted within small businesses. It is worth noting however, that the salaries of the two auditors in West Yorkshire were about twice their Cumbria counterparts and this impacted greatly on overall costs. Furthermore, any perceived differences in productivity could reflect the assertion (noted elsewhere) that the project at West Yorkshire required further implementation time in order to be 'fully up to speed.'

In terms of indirect activities (external impacts) it would be appropriate to again include an additional cost for implementing the recommendations made during the project. Similar to Cumbria however, no information was available at the time of writing on recommendations that had been implemented.

### ***Merseyside Ethnic Minority Arson Awareness and Reduction Team***

The scheme operating in Merseyside had elements of both awareness raising and capacity building. The primary cost associated with the scheme was the employment of three 'advocates' on a full-time basis for 1 year. Although the advocates were in place by September 2002, the process leading to their recruitment and selection could be traced back to April 2002. Overall, the cost of this and other set-up activity (preparation of the project bid/plan, initial training) was estimated to be £11,779.

The main elements of the ongoing costs were:-

- Advocates salary and on-costs (3 staff at £19,412 each)
- Support/line management input (ADO 256 hours, Fire control officer 256 hours, field management SO 2 896 hours) at £35,884

Finally, over £12,000 costs were incurred in relation to the apportioned cost of equipment (two cars, computer, videos, smoke alarms) and promotional material (press advertising).

The overall cost was £115,015 or £260 per arson audit conducted.<sup>57</sup>

In terms of external impacts, the project is anticipated that the project will have both a positive impact on local living standards and also improve/increase the recruitment of ethnic minorities into the fire service.

While no data exists on these issues, it should be noted however that the key focus on involving the local community could be deemed to attract an additional cost in terms of their participation. For example, assuming 30 members of the community attend the quarterly steering group (4 meetings) and each meeting is 2 hours in duration. Then at an average cost of each community attendee of, say £10 per hour (for giving up their leisure time), we could add an additional £2,400 to the overall economic costs. Similarly, the 113 meetings/surgeries with community groups could also attract an economic cost. Assuming the meeting were on average attended by 5 people from the community and were again 2 hours in duration then an additional cost of £11,300 could be added.

## VEHICLE ARSON

Three case study schemes focused on vehicles-related arson: Avon Car Clear; Swansea Vehicle Arson Reduction Initiative; and the Luton Arson Task Force. While the schemes vary in the diversity of measures implemented all three included at their core a focus on:-

- Capacity building activities including initial set-up of partnership systems, ongoing management and communications and data monitoring, analysis and evaluation
- Removal of vehicles/fuel
- Awareness raising

More details on these and other components of each scheme are provided below.

### ***Avon Car Clear Project***

Activity in the Car Clear project was funded through the ACF from November 2001 to April 2003. Detailed information was provided by the Avon Fire Service in relation to the resources used in delivering the scheme.<sup>58</sup>

The formal set-up of the ACF funded Car Clear initiative began with the production of the project bid/plan. During this period a multi-agency partnership was established for the whole of the Avon. Through this partnership £59,000 of additional funding was formally levered-in, supplementing the ACF funding of £113,000 over two years. Overall, set-up costs for the ACF funded Car Clear scheme were estimated to be £5,752 based on the costs associated with senior staff input.

In terms of ongoing delivery, the main cost drivers were identified as being:-

- Payments to contractors to remove abandoned/unwanted vehicles

<sup>57</sup> Although the differing mix of capacity building and awareness raising activities (arson audits, promotional ventures) makes it difficult to make direct comparison with the schemes operating in West Yorkshire and Cumbria.

<sup>58</sup> Clearly, the 'Car Clear' project sponsored under the ACF drew heavily on the pre-existing scheme first implemented in 1999. Since data was made available in relation to the costs incurred in relation to activity prior to the NPI funding, it was possible to identify the costs associated with different stages of delivery.

- Police training/awareness
- The salaries of the two core team members

The 'removal of fuel' was the key focus of the project. Under this intervention heading costs were incurred in the identification/reporting of suspect vehicles, police checks and subsequent removal of vehicles deemed to be abandoned.<sup>59</sup> 12,417 calls were received via the hotline schemes operating across Avon. The cost per call was estimated to be about 25 pence based upon police time spent listening to callers, completing the necessary forms and initiating requests.

More significantly, about £225,000 was also spent on contractor's fees for the removal of 9,023 vehicles.<sup>60</sup> The 5,495 vehicles removed under the South Bristol and All Avon '101' schemes contributed to over 90% of vehicle removal costs. It is worth noting however that a number of vehicle removal schemes were revenue generating. Where the vehicle was unwanted ('Owners Request' scheme), on commercial property ('Commercial Traders' scheme) or deemed of very low saleable value ('Auction House' scheme) the partnership was paid by private agents to remove 'at risk' vehicles. We can estimate that around £13,575 (or 68% of these scheme's costs) was generated from private individuals in this way.

Police training, delivered by the core staff to 1300 police officers was estimated to have an economic cost over £117,000. Almost 80% of this cost relates to time forgone by the police trainees. It should be borne in mind however, that training costs (as human capital investment) are often better be apportioned over many years.

More generally, awareness raising activities focused on production of the POP document / business case (£13,000), delivery of internal and external presentations (£21,000), production of the aide memoire cards (£2,500) and the project launch (£3,500)

Elsewhere, analysis of the input of the two core staff reveals that around a third of their time was spent on capacity building activities, almost two-thirds on vehicle removal/removal of fuel, and the remainder (about 4%) on awareness raising.

Finally, capacity building activities included:-

- General administration and (ad hoc) meetings (£27,000)
- Core team training and conferences (£8,500)
- Monthly (to July 2002) and bi-monthly (thereafter) meetings between senior partner agencies staff (£5,600)
- Evaluation / public survey, general data collection and database management (£6,000)

Beyond these costs, we could expect the Car Clear scheme to have positive external impacts on the local communities in terms of better environment, place to live and so

<sup>59</sup> It is unclear whether the identification of abandoned vehicles, PNC checks and contacting the contractors to remove the vehicles represents wholly 'additional' activity. While, for example, the identification of vehicles within 'normal' duty appears at face value not to be additional. It could be argued that a change of emphasis does divert police time away from activities that will otherwise need to be resourced. As such, and in order to fully inform future funding requirements over the medium term, we have included the costs within this evaluation.

<sup>60</sup> We see below that in Swansea, vehicles were removed 'freely' by private contractors. A similar approach would have clearly had a major impact on cost burden for the Avon Car Clear partnership

on. Valuing such benefits is beyond the scope of this report but in the longer term, a relationship could be explored, for example, with changes in local house prices.

### ***Swansea Vehicle Arson Reduction Initiative (VARI)***

Similar to the Car Clear scheme operating in Avon, the Swansea Vehicle Reduction Initiative (VARI) was also operational prior to ACF funding. Again data was made available that allowed economic costs to be estimated for this period. These can be summarised as:-

- Establishment of initial partnership working including associated data sharing (£15,300)
- Establishment of Vehicle Arson Reduction Initiative (£5,200)
- Development of the 'burnt out vehicles' protocol (£5,300)

These activities mainly involved input from senior staff from the main police, fire service and local authority partner organisations.

Delivery over the ACF funded period included elements of capacity building such as included internal and external meetings, data sharing / data exchange and set-up of the DVLA link. These interventions contributed around £116,000 or about 45% of the total project cost. Elsewhere situational prevention activities – such secure car parks initiative, target location security – provided an additional £68,000 or around 26% of total costs.

The remaining costs were derived from, awareness raising (12% of total costs), youth schemes aimed at reducing the proclivity to offend (3%), removal of fuel (2%) and improvement in detection by increasing investigation into fraudulent arson claims (1% of total costs). The remaining 11% represented the set-up costs discussed above.

It is worth noting that around 60% of total costs represented the input of non-seconded staff – mainly senior staff input to internal and external meetings.

### ***Luton / Bedfordshire***

In terms of resource consumption, the Arson Task Force intervention operating in Luton was the most substantial of the case study projects. By the far the greatest costs associated with the scheme related to the removal of vehicles /fuel. However, in addition to the ubiquitous inclusion of capacity building, the Luton scheme also contained many elements that were the focus of other case interventions. For example, the components that included the employment of an Arson Task Force Officers and assistant, together with a (half-time) seconded Arson Reduction Officer, bared strong resemblance to the Arson Reduction Co-ordinator schemes operating in Northumbria and West Sussex.

Overall, five main elements of the cost of the intervention were identified:-

- the cost of capacity building (training, line management support, general office duties) at £156,275
- the overall cost of removing 11,004 abandoned, burnt-out and untaxed vehicles (including protocol development, vehicle removal fees and environmental action day activities) at about £77 per vehicle removed
- Reducing proclivity to offend through educational interventions at around £5,800

- The cost of improved detection through improved workings with police (including the production of video funded by the police) at £53,300
- The cost of other internal and external awareness raising (including leaflet advertising) at £27,750

Overall costs were estimated to be in excess of £1.1 million.<sup>61</sup> However, about 70% of these costs represent payments by the wider partnership for contractor's fees in the removal of vehicles.<sup>62</sup> Other key cost driver included:

- The Salary and on-costs of LATFO and LATFA over 29 months (£116,000)
- A seconded arson reduction co-ordinator (Station Officer grade) working half-time on the project but funded through the fire service (£54,000)
- Time provided by senior agency staff in relation to the Environmental Action Days (£54,500)
- General line management and administration (£32,000)

Finally, set-up activities were valued at just over £10,000

## **ARSON REDUCTION CO-ORDINATORS**

Interventions focusing on the deployment of arson reduction co-ordinators were run in Northumbria and West Sussex. Both schemes included capacity building and awareness raising interventions. West Sussex also included interventions aimed at reducing proclivity to offend, while the scheme in Northumbria extended to the removal of fuel (including rubbish and abandoned vehicles). Both schemes were also implemented as part of wider operations. This was particularly prevalent in the case of West Sussex which was deemed, overall, to be very much about co-ordination of existing interventions rather than developing new ones.

At first sight, both schemes had significantly high levels of in-kind resourcing. However attributing economic costs to the ACF funded activities in both areas (but particularly West Sussex) was problematic since evaluators could not be sure that the 'in-kind' resources were not being funded under other (existing) schemes (that is, the input was not additional or diversionary). In both cases, however, detailed costing information was provided by the key project personnel.

### ***Northumbria Arson Reduction Co-ordinator***

The Police sponsored scoping study conducted throughout 2000 provided the foundation from which the project plan could be formed and intervention foci drawn. We estimate that it would cost around £35,500 to replicate this activity elsewhere, including the cost of time spent analysing and disseminating findings through meetings with relevant fire service staff. Other, more general set-up costs for the ACF funded intervention were valued at £2,632.

Beyond the set-up phase, the main costs included:-

- ARC's salary and training, line management support and general office costs at £78,409

<sup>61</sup> Giving a substantial in-kind resource cost of over £900,000

<sup>62</sup> in-kind costs fall to £150,000 if vehicle removal fees are excluded

- 1,045 vehicles removed at total (all in) cost £25.87 per removal
- 447 radio adverts aired for a total cost of just over £100 per advert

Elsewhere, a broad estimate of costs for the removal of rubbish from 1210 locations would be £6.44 per removal based upon local authority staff taking 30 minutes per removal.<sup>63</sup>

Overall costs for the intervention over the 33 month period to December 2003 would be £160,153. An additional £35,137 can be added for set-up costs including the scoping exercise. As a percentage of total ongoing costs, capacity building, awareness raising and the removal of fuel represented 49%, 29% and 22% respectively.

The project relied on significant in-kind resource provision. Indeed, only 40% of ongoing costs were met by the ACF budget - no provision existed, for example, within the ACF budget for the £45,000 paid in fees for the radio adverts. However it should be noted that over 90% of the vehicle removal costs were sustained through insurance based claims.

### **West Sussex**

The second project based around the activities of an arson reduction co-ordinator was the scheme operating in West Sussex.

It was noted previously that ACF funded activity exists within plethora of other youth orientated schemes operating in the West Sussex area. Nevertheless, very detailed data was provided by the fire service in relation to the activities of the ARC (the main ACF funded cost), particularly in relation to working with these other schemes. General set-up activities amounted to £17,553 or about 16% of total costs. Ongoing intervention costs included:-

- Capacity building including 'closer working with police' (£6,563), 'co-ordinating existing schemes' (£2,688) and 'partnership working' (£44,849)
- Internal and external awareness raising activities (£22,833)
- Reducing proclivity to offend (£16,834)

The complexity of funding sources made it difficult to draw estimates on the level of in-kind funding. Comparing overall spend with budgeted costs reveal a potential in-kind contribution of £81,320 (73% of total).<sup>64</sup> This 'free' resource was provided mainly through the fire service (for example, senior staff input), although community groups, local authority and (to lesser extent) police input also provided additional input. This result is significantly greater than that found at Northumbria and it is worth re-iterating that it is likely that some of the in-kind costs should be apportioned to other schemes operating in West Sussex.

However, over 95% of costs do represent personnel input (compared with 55% in Northumbria excluding the radio adverts). 42% of personnel costs are made-up of the full time co-ordinator (78% for the core team in Northumbria).

<sup>63</sup> Although we recognise that this cost may be on the low side, since no account has been made for the costs of equipment/transport and waste disposal (for which no information was available).

<sup>64</sup> Budgeted costs at West Sussex differed from other case study schemes in that they included both ongoing **and** set-up activities. To derive in-kind costs, budgeted spend was therefore compared with overall (total) costs.

In terms of other replication issues, one of the problems encountered by the scheme was a longer than planned set-up period.<sup>65</sup> Although it would be prudent to anticipate such problems occurring elsewhere, dissemination of the final job specification (and similar related issues) would have clear cost saving implications. Furthermore, it is worth noting that no inclusion has been made for the costs of transporting children to and from the youth scheme.<sup>66</sup> The purchase of minibus to transport the children would, of course have additional costing implications.

## OTHER SCHEMES

### ***South Tyneside Problem-Solving Model***

Estimating the costs of staff involved in 'Problem Solving Model' delivered at South Tyneside proved difficult. Although detailed input time was provided, this was deemed unreliable since recorded annual input, in some cases, far exceeded that expected under normal working practice. Furthermore, no budget information (beyond the total budget) was made available. It was therefore decided that the budgetary cost of £60,000 per annum would better reflect the cost of the seconded Arson Task Force staff. Then, in order to apportion these staff costs across interventions, the original detailed input times were used as a guide.

The main cost elements of the Arson Task Force were therefore found to be:-

- Capacity building at around £120,000 (including about £70,000 on partnership development such protocols, data exchange and so on)
- Removal of fuel at just under £55,000
- Improved detection (including better working between police and fire brigade and improved investigations) at approximately £40,000

In-kind costs were found to represent almost half of total costs and set-up costs around 5%.

### ***Shropshire 'Fire Investigation Training'***

The Fire Investigation training delivered in Shropshire was the least complex of the case study interventions. The trainer's fees at £950 per trainee represented the main costs, although around 40% of the total costs relate to the opportunity cost of trainee's time input. Although the overall project cost was estimated to be £33,626, when police costs are excluded the project approximate to budgeted costs of £22,000.

<sup>65</sup> It is noted in more detail in the case study write-up that development of the job specification took longer than planned.

<sup>66</sup> Transporting was carried out by parent during the project period